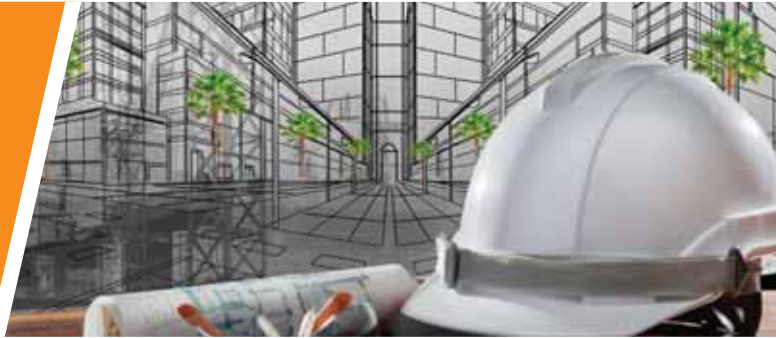


CHITKARA
POLYTECHNIC



3-Year

Diploma Engineering Programs in

ELECTRICAL | CIVIL | MECHANICAL



CHITKARA
UNIVERSITY



EXPLORE YOUR POTENTIAL

Whether you want to broaden your mind, advance your career, increase your knowledge, travel the globe or change the world, Chitkara University can provide you with the **opportunity** and real life skills to do it.

STRONG ACADEMIC HERITAGE

Chitkara University which has been founded by highly accomplished and **passionate** academicians, is emerging as one of the leading non-profit private Universities in the country.

100% CAMPUS RECRUITMENT

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**".

INNOVATION

Chitkara University is different. Our students are different. So are our faculty, our academic strengths, research pedigree and our outlook on **teaching and learning**.

THINK

Students from around the country are attracted to Chitkara University because all our academic programs are designed with keeping **YOU** in mind.

So, go ahead. Sign on the dotted line for your future success.

AN INSPIRATIONAL
STUDENT EXPERIENCE
AT A LEADING
**NON-PROFIT PRIVATE
UNIVERSITY OF
INDIA**

WHO ARE WE?

Chitkara University has been founded by **Dr. Ashok Chitkara** and **Dr. Madhu Chitkara** who have been passionate teachers for more than 40 years now.

Since the inception of the University, Chitkara University has been **different**. Our students have been different. So are our faculty, our academic strengths and our outlook on **teaching** and **learning**.

The unique difference being that Chitkara University has been established by and managed by **passionate** academicians with the sole mission of making each and every student **"Industry ready"**

This difference has been acknowledged by students, parents, alumni, Government and Industry since the inception of the University. Within a decade, most of our academic programs are ranked among the **top 50** programs in the country which speaks volumes about our **strong** academic heritage, highly committed **faculty**, extensive Industry collaborations, great international connections and state of the art campus facilities.

JOIN CHITKARA UNIVERSITY TO
EXPLORE **YOUR** POTENTIAL !!





Dr. ASHOK K 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.”



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 6000 students and 1000 faculty members.





Chitkara Polytechnic would derive its academic strength from the strong reputation and proactive industry collaborations of Chitkara University which is the leading non-profit private University of North India



Chitkara University has been in the forefront of higher education in North India and boasts of a learning environment that represents a unique blend of distinguished faculty, brilliant students with strong industry collaborations and extensive partnerships with International Universities.

Our major academic programs are consistently ranked among top 50 in the country that speaks volumes about our enduring commitment, strong academic heritage and innovative teaching practices.

Chitkara University offers full time Degree Programs in :
Engineering | Architecture | Hospitality | Pharmacy
Mass Communication | Business | Accounting
Allied Healthcare | Nursing | Education



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 passionate 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. This is a solid platform for your potential, for your ambition and for your career.



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 students to hit the ground running.

Strong corporate relationships also have a direct influence on our 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. Chitkara University's board also has a strong representation of top level executives from top corporate's across the world.

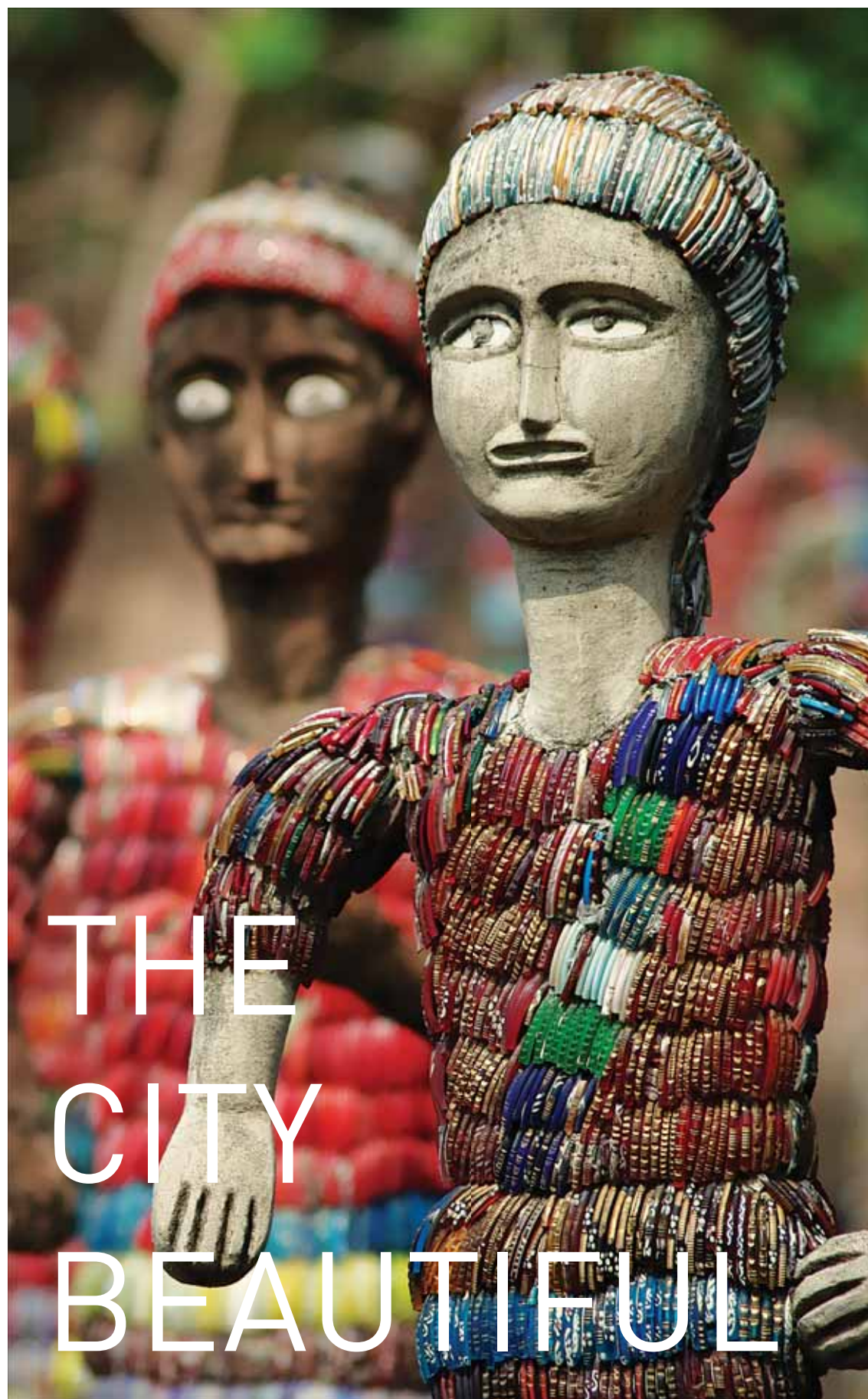
GREAT CAMPUS RECRUITMENT

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

START ME UP

Innovation and entrepreneurial thinking are highly valued at Chitkara University. 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.



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.





THE POLYTECHNIC ADVANTAGE: A HIGH-QUALITY, JOB-FOCUSED TECHNICAL EDUCATION AFTER CLASS X

The aim of the polytechnic education is to create a pool of skill & knowledge based manpower to support shop floor and field operations as a middle level link between technicians and Engineers. The pass-outs of Diploma level institutions in Engineering & Technology play an important role in managing shop-floor, technical service and manufacturing operations. It is further an established fact that small & medium industry prefer to employ Diploma Holders because of their special skills in interpreting Engineering drawings, estimating, costing, billing, supervision, measurement, testing, repair & maintenance etc.

Chitkara Polytechnic is a Chitkara Education initiative to provide students, opportunity to grow vertically & horizontally in their career paths with Electrical, Mechanical & Civil specialization. All our programs comes with mandatory industry internship and are offered with 100% placement assistance with partner organisations, which ensures a successful career start in various industry domains.

Our 3-Year program provides career-focused and community-responsive education developed in partnership with employers combining theoretical and applied learning, relevant work experience for students and the opportunity for them to participate in applied research and commercialization projects.

ENGINEERING EDUCATION @ CHITKARA POLYTECHNIC

Creating, inventing, innovating, attacking challenges, solving problems, improving the quality of life—these are the driving forces for Diploma Engineers. The Diploma Engineer's ingenuity is a driving force in our society. From space stations to microsystems, the potential for innovative Engineering is endless. If you're wondering what the future might look like, Chitkara Engineering programs can show you the way.

Our courses enable you to develop your Engineering knowledge, skills, imagination and experience to the highest levels in readiness for your future career. The Engineering programs at Chitkara Polytechnic combine classroom learning and laboratory/workshop practice in technical areas with a broad liberal arts curriculum and industry assignments to give you an Education tuned to the 21st century wavelength. We are dedicated to giving you an exceptional Engineering experience with knowledgeable and engaged faculty and the latest equipment and technology.

For the academic year 2015, we are offering the following programs:

- **3-Year Diploma in Civil Engineering**
 - **3-Year Diploma in Electrical Engineering**
 - **3-Year Diploma in Mechanical Engineering**
-

SO WHAT DOES IT TAKE TO BECOME A DIPLOMA ENGINEER?

Technical Excellence

At Chitkara Polytechnic, it's given that you will be challenged technically. Our students take Engineering classes from day one and other technical electives. Classes normally have a lecture, a lab, and practical. We offer diploma's in three traditional disciplines: **Civil Engineering, Electrical Engineering & Mechanical Engineering.**

Exploration and Innovation

Our students must have the ability to think for themselves. Chitkara students are passionate and focused. Our students all have that drive—the need to investigate and ferret out solutions, to build, to invent, to design, to develop. Not only do we recognize it, we welcome you to bring it on!

We prioritize teaching students on how to bring their ideas to fruition, not just by enhancing technical skills, but by teaching them how to foster innovation. We teach students to manage the process, to make sure that you have the skills to take your ideas to the highest possible level. We know you have the passion; we will teach you how to harness and apply it.

Intellectual Curiosity

At Chitkara, you should expect more than a course schedule and books. We want you to get your hands dirty. Majority of our students participate in industry driven projects during their Diploma years. You will be given opportunities to work with faculty and can even apply for financial support for your own research projects.

Communication Skills

The stereotypes of Engineers are a thing of the past. Students, who graduate from Chitkara must be capable of articulating their ideas, contributing successfully in teams, and working collaboratively with non-Engineers, such as product designers or business managers. To manage projects, to solve problems, to partner on ideas, to successfully advance your career.

Verbal and written communication is also essential to be a world class Engineer. You can have the best idea in the world, but if you can't articulate it, it probably isn't going very far. Chitkara students are required to fulfill general education requirements that include intensive focus on communication skills.



INDUSTRY COLLABORATIONS

Chitkara University maintains close link with leading corporations and professional associations to deliver most of our professional 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. Some of our leading industry collaborations are:

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".

- 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.
- nVIDIA which is one of the leading company in the parallel computing space has granted the status of "CUDA teaching Centre" to Chitkara University.
- 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, Dassault Systems, National Instruments & Oracle to develop and deploy industry-relevant curricula on various technologies for our Engineering curriculum.
- Our program in Mechanical Engineering has been endorsed by leading companies such as Mahindra, Rasco, Dassault Systemes, Tata Technologies And Bosch.
- Chitkara Business School is offering a unique 2 year MBA program in Human Resource management with Manpower Group, which is the leading manpower consultancy in the world.
- Joint management programs with BSE Institute has helped us initiate academic programs in the realm of financial sector knowledge.
- Our program in supply chain management works towards bridging the huge skill gap prevalent in the logistics industry through our industry partner, Safexpress, India's largest supply chain & logistics company.
- All degree programs offered by the School of Health Sciences are in collaboration with Fortis Healthcare, which is one of the leading healthcare providers in Asia.
- Our Optometry programs are fully endorsed by Sankara Healthcare which is one of the leading eye care chains in the country.
- The curriculum and program structure for all our Journalism and Mass Communication has been inspired and adapted from the UNESCO Model Curricula for Journalism Education.
- Strong Association with leading media corporations such as ZEE Network and other media companies has been a great support in redefining our programs in Mass Communication.































THE START
OF SOMETHING
BIG



CAMPUS RECRUITERS

SINCE INCEPTION, CHITKARA UNIVERSITY HAS A PATH BREAKING RECRUITMENT RECORD FOR GRADUATES FROM VARIOUS ACADEMIC PROGRAMS. SOME OF THE PROMINENT RECRUITERS ON CAMPUS ARE:



AAUTOSYNC

Automotive Centre of Excellence

Aautosync is an innovation research centre inceptioned 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.



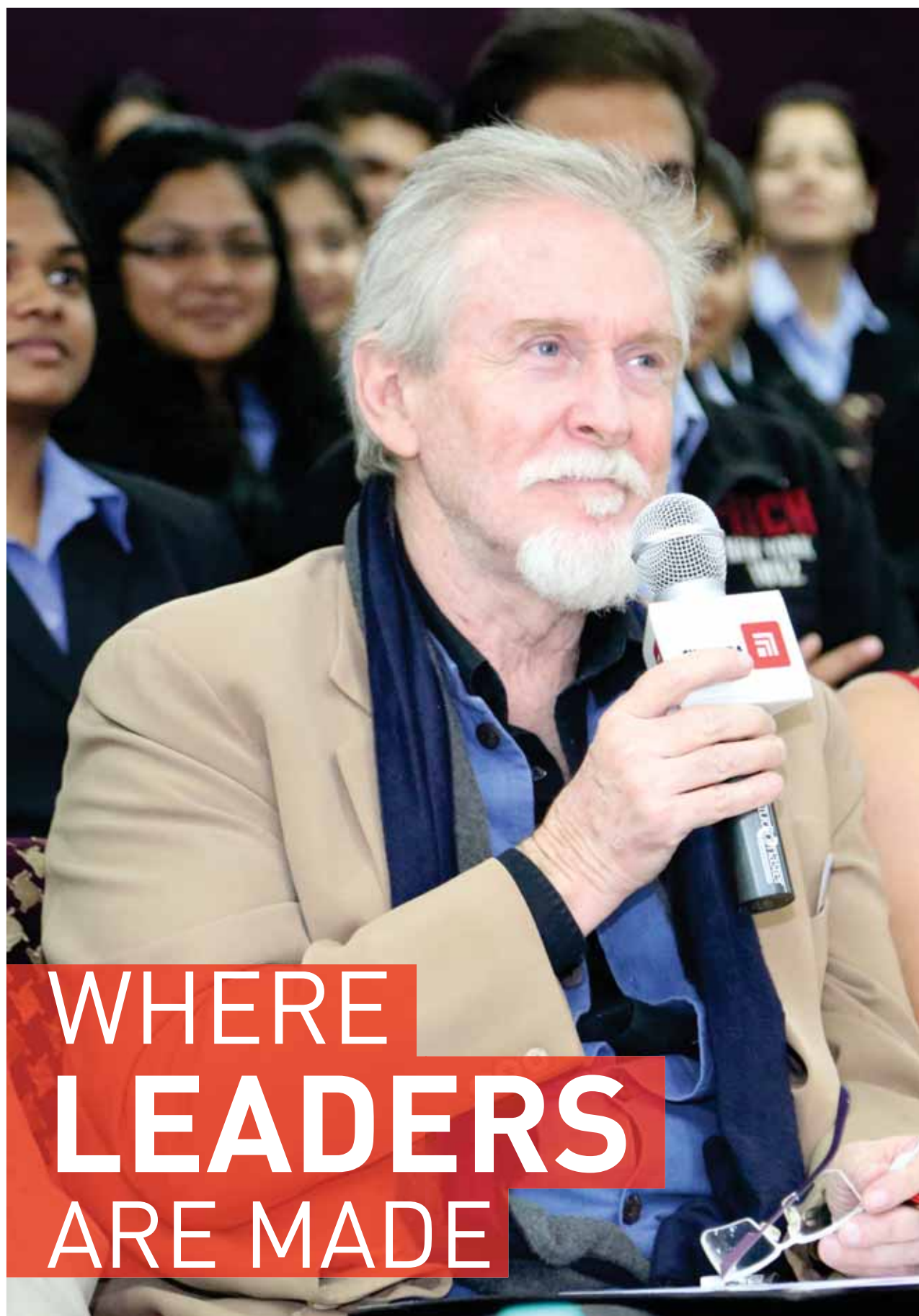
Mahindra Rise Igniters have collaborated with the centre forming "Igniters Innovation Lab".



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 and Live Project management.



WHERE
LEADERS
ARE MADE



COMMUNICATION SKILLS

ATTITUDE, COMMUNICATION & KNOWLEDGE ARE THREE ESSENTIALS FOR STUDENTS TO SUCCEED IN THEIR LIVES. WE EMPHASIZE MORE ON THESE THREE ASPECTS THOROUGHLY TO MAKE OUR STUDENTS COMPETENT AND CAPABLE PROFESSIONALS.

We provide a specially designed training program to the students in order to improve their employability skills and to prepare them to face interview boards more effectively. The objective of this program is to provide the students with an integrated module of personality enhancement emphasizing those areas which are essential for the overall growth and development of a confident and well groomed professional.

In a recent survey of recruiters from companies with more than 50,000 employees, communication skills were cited as the single most important decisive factor in choosing employees. The survey points out that communication skills, including written and oral presentations and an ability to work with others are the main factors contributing to job success.

At Chitkara University, our qualified in-house trainers for communication skills provide language training, where students learn to speak and communicate effectively. Sufficient opportunities are provided to our students to master their language skills through group discussions and presentations.



LEARNING IS **FUNDAMENTAL**

Chitkara University in a nutshell? - Cool vibes, great events and excitement all year round, sports, theatre, excursions, always somebody home next door. That is it.









STUDENT LIFE 2.0

Student life at Chitkara University is more than just ardent toil next to a big pile of books. The wide range of clubs and students associations, as well as the surrounding environment, provides memorable experiences ranging from culture to sports & fitness.





3-Year Diploma in ELECTRICAL ENGINEERING



3-Year Diploma in ELECTRICAL ENGINEERING

Electrical Engineering is a field that deals with the study of electricity, electronics, electromagnetism, energy & its allied applications. Electricity and its applications play a pivotal role in powering many devices and appliances. The impact of electrical Engineering touches almost every area of our lives. Electrical Engineering at its core is concerned with the basic forms of energy that run our world.

The Diploma in Electrical Engineering at Chitkara Polytechnic will focus on:

- a. Electricity Switching & Distribution**
- b. Energy Management**

India is growing—our economy, our population, our industry and our demand for energy. Electrical Engineers are specialists in the generation, transmission, distribution and utilization of energy. It's a powerful career choice that demands good problem-solving skills and an eye for detail. As the world prepares for the challenges posed by climate change and if you want to make a difference in combating this pressing global problem by innovating environment-friendly products, systems and services to improve quality of life, this diploma in Electrical Engineering will put you on the right track.

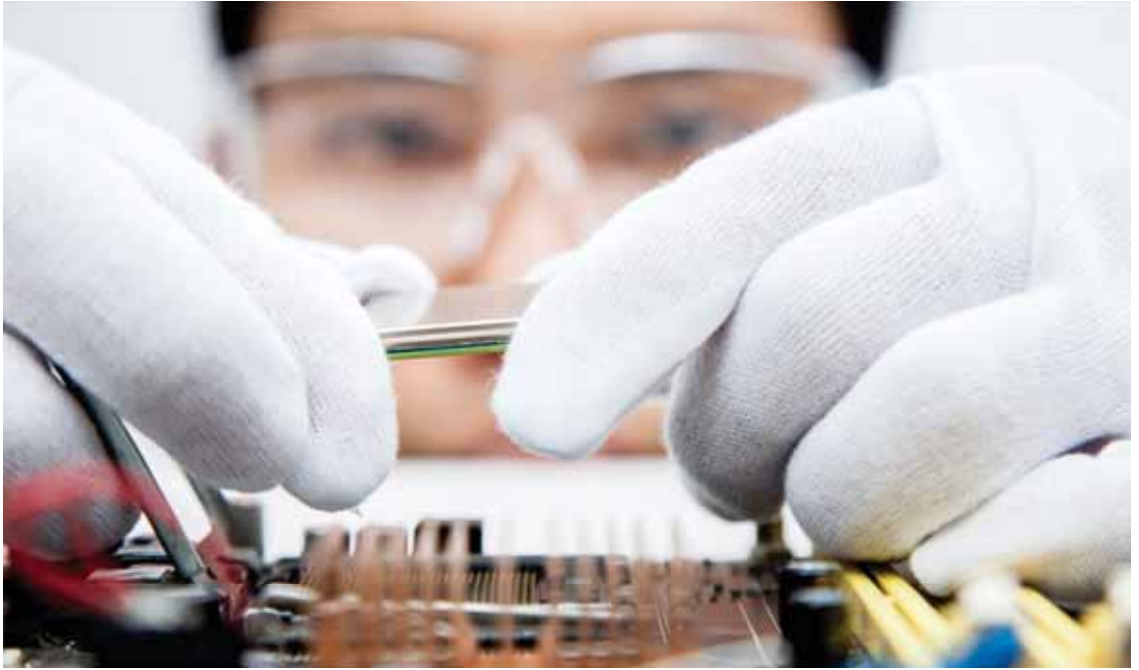
Electrical Engineering will enable you to excel and grow in critical industry sectors such as energy & power, green buildings as well as the rapidly emerging clean and green technology sector. What's more, this program also prepares you to pursue further studies leading to undergraduate and postgraduate qualifications from reputed local and foreign universities.



STUDENT LEARNING OUTCOMES

Some of the key student-learning outcomes for the Diploma in Electrical Engineering are as follows :

- Apply knowledge and technical expertise in building, analyzing, testing, operating and maintaining electrical, instrumentation, control systems and associated green technologies, including relevant industry standards and code of practices
- To do maintenance, repair and production of electrical equipment and its systems
- Procure, inspect and test electrical and electronic Engineering materials.
- To do fault diagnosis, repairing small electrical gadgets/domestic appliances, making joints and carrying out wiring work
- To select, operate, maintain, test and repair/replace electrical machinery used in various industrial and domestic appliances
- Ability to do industrial installation, laying cables, earthing, installing motors with their accessories, wiring and testing of control circuits
- Preparing estimates of different kinds of jobs in domestic wiring, industrial wiring in transmission and distribution systems to install, erect and commission the power equipment
- Designing wiring schemes for domestic and power installation and drawing layouts for wiring & building automation



ACADEMIC FRAMEWORK

- The Diploma in Electrical Engineering is a 3-Year full time program offered by **Chitkara Polytechnic**, constituent institution of **Chitkara University**, Punjab.
- This program is offered in collaboration with **Schneider Electric**, bringing a complete blend of academic learning and best hands-on support.
- There are five academic semesters and last semester is solely dedicated to Intensive Industry Internship Program.
- Dedicated laboratories allow students to combine their practical and theoretical studies providing real time simulation that prepares them for field situations.
- Curriculum is industry focussed to ensure the student stays connected with real time working.



PROGRAM CURRICULUM

YEAR - 1

- Emphasis is laid on foundation science courses and basics courses in Electrical & Electricity.
- Intensive focus on developing communication skills, which equip students for better learning.

YEAR - 2

- Introduces students to the domestic electrical environment allowing them to read & prepare Electrical schematics, laying wiring and also applying concepts learned through electrical machines and electrical circuits.
- Students learn industrial Electrical environment by applying all conditions starting from preparing schematics, laying out wiring in panels and driving heavy electrical machines by feeding high energy
- Later part of the year students learn, understand and work on automation in domestic & industry environments using newer techniques and equipments, which compliment real time environment and data logging for statistical power analysis solutions

YEAR - 3

- Focuses on learning majorly in the domain of energy quality, energy audit and energy management, preparing students for the niche market.
- With the acquaintance of knowledge in electrical, electricity and in energy domains, students will undergo focused intensive industry internship program, resulting in practicing all the core learning in real life industry environment. Also the student will prepare a major technical project, which demonstrates his learning and capability for starting his career with blue chip companies across the world.

CUTTING EDGE INFRASTRUCTURE

Major focus is laid in creating best in class lab & workshop infrastructure, which makes blended learning possible and the lab is equipped with advanced equipments from **Schneider Electric, France**. This allows deeper conceptual learning by simulating real time industry environment part of electricity & energy domains

TECHNOLOGY LABS

- Basic electrical & electricity lab (AC & DC)
- Domestic wiring lab (Single & Multi Floor Concept)
- Industrial wiring lab (Single & Multi Panel Concept)
- Building automation lab (KNX Protocol)
- Industrial automation lab (PLC's & Drives)
- Non conventional energy generation lab
- Power transmission & distribution lab
- Domestic switching & consumption lab
- AC machines & drives Lab
- DC machines & drives lab
- Power architecture lab
- Energy quality lab
- Energy audit lab

PRACTICE WORKSHOPS

- Individual cubes to allow students to lay piping, fittings and install electrical accessories
- Indian, European, American style of wiring layouts for practice & replication
- Space with all connections in place to conduct final certification assessments
- Open area (Roof & Floor) for construction and underground exercises
- Fitting workshop with all amenities
- Welding workshop with all amenities
- Height adjustable platforms up to 30 feet to allow students to work on various heights
- Building automation & building power management workshop
- Fire protection system workshop
- Central heating with various temperature control chambers simulation workshop

SUPPORT INFRASTRUCTURE

- AC – 3 phase power supply (Uninterrupted)
- AC - Single phase power supply (Uninterrupted)
- 3 Phase 440 V Solid State Bus Bar
- DC power supply (Uninterrupted)
- 64 KW back up generator
- Single & Multi Stage Transformer with Capacitors
- Low voltage switch gear display area (Static & Functional)

INDUSTRY COLLABORATION



Schneider Electric is world's largest electrical & energy solution company having its head quarters at France. From 1836 to today, Schneider Electric has transformed itself into the global specialist in energy management. Starting from its roots in the iron and steel industry, heavy machinery, and shipbuilding, it moved into electricity and automation management. After 170 years of history, Schneider Electric has become today the solution provider that will help you make the most of your energy.

"Institute of Electricity & Energy Management" (IEEM) is the whole new initiative of Schneider Electric in association with French Ministry of Education, France jointly working to establish state of the art learning facilities in Electricity & Energy Management domains across globe. As part of this initiative, Schneider Electric joined hands with Chitkara Polytechnic an integral part of Chitkara University to offer Diploma in Electrical Engineering with special focus on electricity & energy management.

Schneider Electric as principle collaboration industry takes responsibility of bringing industry blended curriculum, subject contents, pedagogy advocacy, faculty training, establishment of state of the art lab infrastructure, which makes learning truly world class. In addition Schneider Electric will also facilitate intensive internship, assessment of students and certification from IEEM, which is globally recognized. What more, subject matter experts (SME's) from Schneider Electric will be stationed in Chitkara Polytechnic to oversee delivery of the program for quality, consistency and to bring special emphasize in hands on industry driven practical's.

CAREER OPPORTUNITIES

FOR DIPLOMA ENGINEERS IN ELECTRICAL ENGINEERING

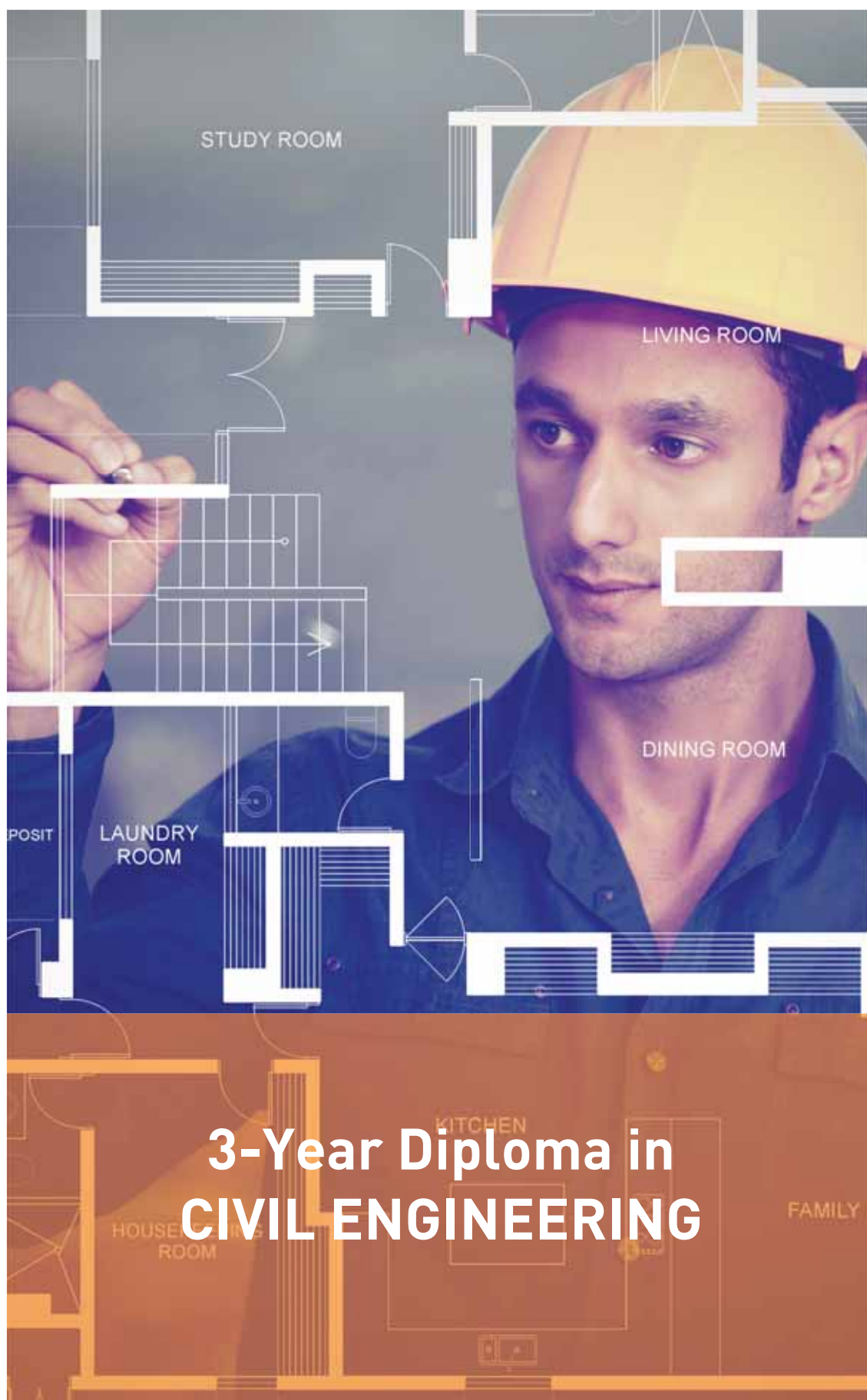
At Chitkara Polytechnic, we are collaborating with major blue chip companies so that you can start your career with flying colors. Given below are some of the companies, which have huge requirement of Electrical Engineers.

Career opportunities abound in wide spectrum of industries as executives, specialists, technologists, Engineers or managers in:

- Electrical Engineering & Services
- Power Engineering
- Energy Management
- Facility Management
- Operations Management
- Sustainable Design & Solutions
- Clean Energy
- Research & Development

3-Year Diploma in Electrical Engineering program is recognized nationally and internationally. After completing the diploma, you can also enter the 2nd year of B.Tech degree through the lateral entry in Engineering institutions across the country.



3-Year Diploma in CIVIL ENGINEERING



3-Year Diploma in CIVIL ENGINEERING

Civil Engineering is one of the ancient Engineering disciplines that deals with design, construction, maintenance of the physical and naturally built environment. To ensure safe, secure and modern structure for human rehabilitation becomes one of the core objectives of Civil Engineering Domain. At its core, it deals with 3 of the natural resources available such as Air, Water & Land extensively.

The fast growing India's population presents innumerable problems in personal and public housing & commercial complex systems. This coupled with growing environment & green house gas laws bring unimaginable level of complexity to today's construction industry. Secondly, growing population & economy of India brings urbanization and enabled construction industries grow multifold in last 2 decades. The demand for Civil Engineers is on rise and soon to become major choice for any aspirants to have wonderful career. It's a powerful career choice that demands good problem-solving skills and an eye for detail. The job itself has a complete construction site & soil focus.

The Diploma in Civil Engineering at Chitkara Polytechnic will focus on:

- a. **Construction Engineering** (Construction management)
- b. **Public Health Engineering** (Fresh & Waste Water Engineering)

Around the world, changing geographical demographics are putting pressure on the planet's most precious resource - **WATER**. This is increasing the demand for skilled engineering technologists, who have specialized knowledge and expertise in water resource management. How our society uses water in the years ahead will impact every sector—business, industry, agriculture, recreation and government.

India has 16% of world's population and has just 4% of fresh water resources of the available water footprint on earth. In recent years, India has emerged as one of the fastest growing economies of the world. Most projections suggest that India is heading towards becoming the world's 3rd largest economy by 2050. Water is one variable that could halt India's march to economic greatness. By 2050, India might have only half the water it needs. If you want to make a difference in combating this pressing global problem, as innovators of water- friendly products, systems and services to improve quality of life, Our program in Civil Engineering will put you on the right track.

Our 3-Year Diploma in Civil Engineering also prepares you to pursue further studies leading to undergraduate and postgraduate qualifications from reputed local and foreign universities.



STUDENT LEARNING OUTCOMES

Some of the key student-learning outcomes for the Diploma in Civil Engineering are as follows:

- Apply knowledge and technical expertise in building, analyzing, testing, operating and maintaining civil, green water, grey water and associated green technologies, including relevant industry standards and code of practices
- To do maintenance, repair and production of plumbing, sanitation & water resources equipment and its systems
- Procure, inspect and test civil and plumbing Engineering materials
- To do industrial installation, laying pipes, installing different types of pumps with their accessories, wiring, testing of control & automation circuits
- Preparing estimates of different kinds of jobs in domestic plumbing, industrial plumbing in transmission and distribution systems to install, erect and commission the water (fresh/waste) system
- Designing water supply schemes for domestic and industry installation and drawing layouts for piping & building automation
- Apply knowledge and technical expertise in designing, building, analyzing, testing, operating and maintaining civil, soil & construction systems, aggregates and components as per laid out instructions
- To do maintenance, repair and management of construction sites, soils and other properties
- Procure, inspect and test engineering materials related to civil construction engineering
- Preparing estimates of different kinds of jobs relating to new construction, site/colony development & maintenance of existing properties



ACADEMIC FRAMEWORK

- The Diploma in Civil Engineering program is a 3-Years full time program offered by **Chitkara Polytechnic**, constituent institution of **Chitkara University**, Punjab.
- This program is offered in collaboration with **IPSC** (Indian Plumbing Skills Council) being very unique offer bring complete blend of seasoned learning with best of the partner bringing industry support (Public Health Engineering Specialization)
- The specialization of construction engineering & management part of civil engineering is offered in guidance with **CIDC** (Construction Industry Development Council) & **CSDC** (Construction Skill Development Council) to bring best of the practices & learning followed by the industry
- There are 5 academic semesters and last semester is solely dedicated to Intensive Industry Internship Program.
- Academic framework lays strong emphasize on learning through hands on. Courses in foundation, technology and advanced technology feature state of the art lab infrastructure enable this without any hassles
- Subjects carry full industry focus to ensure student stays connected with real working atmosphere all the time by means of live projects and active site visits
- To get further ahead, you will work on latest cutting edge lab, which not only simulates the real-time, but also makes you cope up with field situations.

PROGRAM CURRICULUM

YEAR - 1

- Provides excellent foundation for the 1st Year diploma with emphasis on foundation science courses
- Intensive focus on developing communication skills, which makes students equipped for better learning
- Foundation skill gives hands on learning in underground pipe laying, construction of man holes and inspection spots
- 2nd part of year allows students to learn basic courses in Electrical & Electricity backed by full hands-on experience in state of the art labs

YEAR - 2

- Introduces students to the basic Civil environment with surveying & concrete technology and also plumbing codes, standards, work place preparation techniques, water supply (plumbing) in domestic & industrial area
- In addition, allowing students to read & prepare plumbing/building schematics, laying pipes and also applying concepts learned through cold water, hot water supply and wastewater disposal
- Students learn advanced surveying, soil mechanics, concrete technology, structural Engineering subjects, which adds adequate flavor of construction engineering to the incumbent
- In addition, students learn water supply functioning, design of drainage systems, sewage treatment plants including water recycling methods in actual. Student also learns advance piping layout schematics applied at large construction sites, commercial and industrial projects
- Later part of the year, students learn advance piping for domestic and industrial environment for better conservation of water

YEAR - 3

- Brings altogether new focus of learning in water domain by focusing majorly in rain, storm water management, study, application & implementation of water based fire protection systems for high-rise complexes
 - Students get opportunity to learn and work on centralized heating systems using water as primary fuel and also works on advanced climate control chambers
 - In addition, students learn green building practices to save energy and to bring best recycling practices in domestic & industrial shelters
 - With the acquaintance of knowledge in civil, construction, soil, structural, water and in sanitation domains, students will undergo focused intensive industry internship program, which makes students to practices all the core learning in real life industry environment
 - Students will also prepare a major technical project, which demonstrates his learning and capability to be part of blue chip companies across the world
-

CUTTING EDGE INFRASTRUCTURE

Major focus is laid in creating best in class lab & workshop infrastructure, which makes blended learning possible and the lab is equipped with advanced structural equipments from **TOTO, Hindware, Viega, Grundfos, Duravit & Ashirvad** and complete layout from **IPSC**. This allows deeper conceptual learning by simulating real time industry environment part of public health Engineering domains

Technology Labs

Drinking water supply lab (Storing, RO & Hygienic Supply) Industrial water supply lab (Storing, Supply & Disposal)

- Sewage system lab
- Domestic house infrastructure
- Disabled toilet infrastructure
- Multi storied infrastructure (3 tier)
- Brick building & septic tank construction
- Public toilet infrastructure
- Modern flat infrastructure
- Hospital toilet infrastructure
- Under ground piping (Open area)
- Drainage demo infrastructure

Civil Labs

- Structure and Construction lab
- Computer lab
- Soil mechanics lab
- Hydraulics and fluid machinery lab
- Strength of materials lab
- Concrete and highway lab
- Survey lab
- Environmental engineering lab

Shower system labs

- Simple VFD infra
- Hydro-Pneumatic infra
- Modern VFD & Rain flow infra

Practice Workshops

- Individual cubes to allow students to lay piping, fittings and install Cistern, wash basins and toilets (Conventional & Western Style)
- Space with all connections in place to conduct final certification assessments
- Open area (Roof & Floor) for construction and underground exercises
- Fitting workshop with all amenities
- Welding workshop with all amenities
- Height adjustable platforms up to 30 feet to allow students to work on various heights
- Basic electrical & electronics workshop
- Fire protection system workshop
- Central heating with various temperature control chambers simulation workshop

Support Infrastructure

- AC – 3 phase power supply (Uninterrupted)
- 64 KW back up generator
- Drinking water storage pump house (Booster)
- Industrial water storage pump house (Booster)
- Sewerage forced disposal (Pump)
- RO set up
- Rain/storm water storage tank
- Industrial water disposal set-up
- Sewage Treatment Plant (STP)

INDUSTRY COLLABORATION



IPSC is a company incorporated under Section 25 of the Indian Companies Act 1956. The Indian Plumbing Industry faces the mammoth challenge of huge gap between the supply of skilled workforce and the demand of skilled workforce. Plumbing industry, since a long time has been awaiting an opportunity to skill its workforce, and through the mandate of the National Skills Development Corporation (NSDC) has got an excellent opportunity to train its workforce with the latest skills, technology and best practices in the Industry.

The IPSC acts as an accrediting and certifying body; and will work to fill the gap of skilled and unskilled workforce in India. For this purpose, we are partnering associations and organizations, which share its vision, and work to upgrade the skills deficit in the plumbing (water resources) industry. The 11th five-year plan stressed the need to improve the skill level across all the sectors in the Indian Industry; this laid the foundation of the National Skills Development Corporation (NSDC). IPSC is the SSC for the plumbing industry in India to cater to its specific needs and demands.

IPSC as principle collaboration industry body takes responsibility of bringing industry-blended curriculum, subject contents, pedagogy advocacy, faculty training, and establishment of state of the art lab infrastructure, which makes learning truly world class. In addition IPSC will also facilitate intensive internship, assessment of students and certification from Ministry of Labor, which is globally recognized. What more, subject matter experts (SME's) from IPSC & from allied industry will be there in Chitkara Polytechnic to oversee delivery of the program for quality, consistency and to bring special emphasis in hands on industry driven practical's.

CAREER OPPORTUNITIES

FOR DIPLOMA ENGINEERS IN CIVIL ENGINEERING

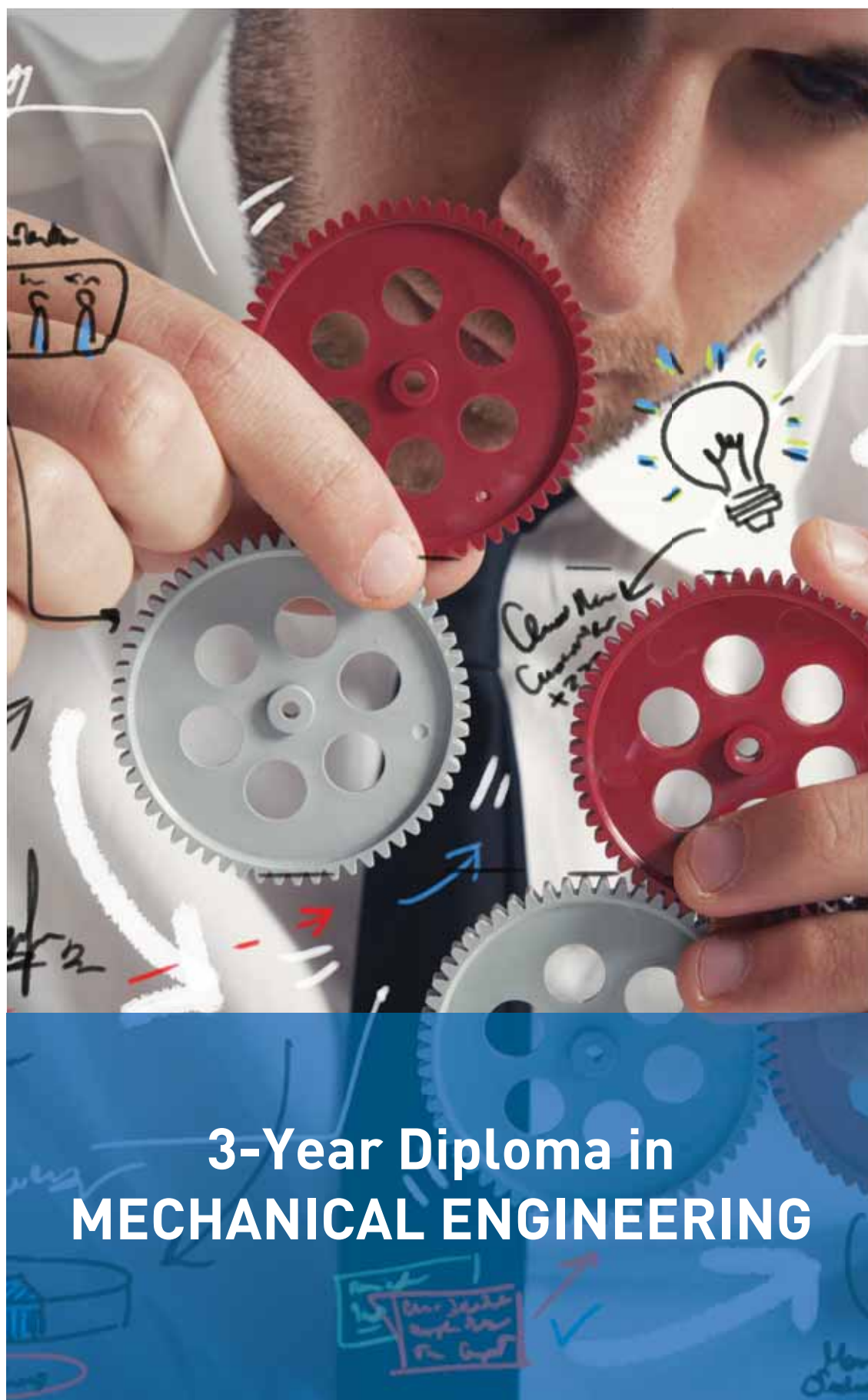
Given below are some of the companies, which have huge requirement of Civil Engineers. At Chitkara Polytechnic we are collaborating with major blue chip companies so that you can start your career with flying colors.

Many of the world's largest construction and engineering companies including L&T, HCC, Technip, GMR Infrastructure, Shapoorji Pallonji & Co. and Gammon Infra regularly visit our campus for recruitments.:

- Building Engineering & Services
- Water Resources Engineering
- Renewable Water Resources Management
- Facility Management
- Operations Management
- Sustainable Design & Solutions
- Clean Energy
- Research & Development

3-Year Diploma in Civil Engineering program is recognized nationally and internationally. After completing the diploma, you can also enter the 2nd year of B.Tech degree through the lateral entry in Engineering institutions across the country.



3-Year Diploma in MECHANICAL ENGINEERING



3-Year Diploma in MECHANICAL ENGINEERING

The Diploma in Mechanical Engineering provides broad-based and diverse engineering learning in areas such as material science, solid and fluid mechanics, thermodynamics, fuels, combustion, instrumentation and control, product and system design and manufacturing. The impact of Mechanical engineering touches almost every area of our lives. Mechanical Engineers are the creators and not only create new technology but also innovate for them.

Mechanical Engineers help ensure the machines, elements, vehicles and systems our society depends on work the way they're supposed to. You need an aptitude for all things mechanical, but you also need good problem-solving and analytical skills, because your job will involve troubleshooting problems, finding better, more efficient ways to do things, and ensuring vital systems stay up and running.

The Diploma in Mechanical Engineering at Chitkara Polytechnic will focus on :

- a. **HVAC** (Heating, Ventilation & Air Conditioning)
- b. **Automobile Engineering**

India is growing—our economy, our population, our industry and our demand for modern infrastructure & sophisticated transport systems are steadily growing. Mechanical Engineers are specialists in the infrastructure design, development and maintenance, which include elevators, central heating, ventilation and air conditioning system and advanced security arrangements. There's a lot of technology at work in today's commercial and institutional buildings, from energy efficient boilers to complex **HVAC** systems (heating, ventilation, air conditioning). Building systems require regular, skilled maintenance-mechanical and technical Engineers. That's why Diploma Mechanical Engineers with specialization in **HVAC** systems are in high demand. You install, maintain and repair refrigeration and air conditioning systems.

The ever-growing India's population presents innumerable problems in personal and public transport system. This coupled with growing environment & green house gas laws bring unimaginable level of complexity to today's automotive industry. Secondly, growing population also makes it viable for all global automobile manufacturers to choose India as their manufacturing base for India and Asia-Pacific. Thirdly, depleting fuel reserve pose major challenge to the manufacturers to bring innovation to save fuel and also offer highest degree of vehicle and passenger safety without compromising road handling & agility. The demand for Mechanical Engineers with specialization in Automotive is on rise and soon to become major choice for many aspirants to have wonderful career. It's a powerful career choice that demands good problem-solving skills and an eye for detail. The job itself has a mechanical focus.

Our 3-Year Diploma in Mechanical Engineering also prepares you to pursue further studies leading to undergraduate and postgraduate qualifications from reputed local and foreign universities.



STUDENT LEARNING OUTCOMES

Some of the key student-learning outcomes for the Diploma in Mechanical Engineering is as follows:

- Apply knowledge and technical expertise in building, analyzing, testing, operating and maintaining mechanical, electrical, instrumentation and control systems associated with HVAC technologies, including relevant industry standards and code of practices
- To do maintenance, repair and production of HVAC equipment and its systems
- Procure, inspect and test refrigeration and air conditioning engineering materials
- To do fault diagnosis, repairing HVAC gadgets/domestic appliances, making joints and carrying out ducting & piping work
- Enable to do industrial installation, laying pipes, ducting, earthing, installing indoor, outdoor units with their accessories, wiring, testing of control & operational circuits
- Preparing estimates of different kinds of jobs in domestic, industrial installation in refrigeration and air conditioning systems to install, erect and commission entire equipments
- Designing & load estimation for domestic and industrial installation and drawing layouts for piping, ducting wiring & building automation
- Apply knowledge and technical expertise in designing, building, analyzing, testing, operating and maintaining automobile vehicles, systems, aggregates and components as per laid out instructions
- To do maintenance, repair and production of automotive equipment and its systems
- Procure, inspect and test engineering materials related to automobile engineering
- To select, operate, maintain, test and repair/replace mechanical/automotive machinery used in various industrial and domestic environment
- Students will also prepare a major technical project, which demonstrates his learning and capability to be part of blue chip companies across the world



ACADEMIC FRAMEWORK

- The Diploma in Mechanical Engineering is a 3-Year full time program offered by **Chitkara Polytechnic**, constituent institution of **Chitkara University**, Punjab.
- This program is offered with guidance of blue chip companies like **Sterling** and **Wilson** (Shapoorji & Pallonji Group) & **ISHRAE** (Indian Society of Heating, Refrigeration and Air Conditioning Engineers) bringing a complete blend of academic learning with best of industry support
- There are five academic semesters and last semester is solely dedicated to **Intensive Industry Internship Program** facilitated by participating industry
- Academic framework lays strong emphasize on learning through hands on. Courses in foundation, technology and advanced technology feature state of the art lab infrastructure enable this without any hassles
- Subjects carry full industry focus to ensure student stays connected with real working atmosphere all the time
- To get further ahead, you will work on latest cutting edge lab, which not only simulates the real-time, but also makes you cope up with field situations.

PROGRAM CURRICULUM

YEAR - 1

- Provides excellent foundation for the 1st Year diploma with emphasis on foundation science courses
- Intensive focus on developing communication skills, which makes students equipped for better learning
- 2nd part of year allows students to learn basic courses in Electrical & Electricity backed by full hands-on experience in state of the art labs

YEAR - 2

- Introduces students to the basic mechanical environment, which allows them read & prepare mechanical schematics, material sciences, manufacturing processes and also applying concepts learned through strength of materials and fluid mechanics
- Students learn thermodynamics, various machining processes that includes machining processes along with advanced mechanical drafting of machine elements
- Courses like Metrology and Heat Transfer are taught in very innovative manner using cutting edge labs, which enable students to understand concepts and apply in real world situations
- Later part of the year allows student to learn, understand and work on refrigeration and air conditioning processes in depth with adequate hands on experiments to foster your conceptual understanding (HVAC Specialization)
- Students will learn automotive systems, components, fuel systems, combustion systems & emission related regulatory affairs giving them required depth of understanding & knowledge in core automobile engineering (Automobile Specialization)

YEAR - 3

- Brings advanced learning in HVAC domain by focusing majorly in R & AC operations and applications, which allows students to prepare themselves for niche domain with complete hands on experience featuring HVAC industry of today & tomorrow (HVAC Specialization)
 - Students will learn automotive electronics, telematics, bus communication systems, engine diagnostics and advanced vehicle simulations and emission monitoring enabling them to meet & surpass of the expectations of automotive industry (Automobile Specialization)
 - With the acquaintance of knowledge in mechanical, materials, manufacturing, refrigeration, air conditioning and in automotive domains, students will undergo focused intensive industry internship program, which makes students to practice all the core learning in real life industry environment.
-

CUTTING EDGE INFRASTRUCTURE

Major focus is laid in creating best in class lab & workshop infrastructure, which makes blended learning possible and the lab is equipped with advanced equipments. This allows deeper conceptual learning by simulating real time industry environment part of **HVAC & Automotive** domains

Technology Labs

- Refrigeration & Heat Pumps lab
- Air conditioning & Psychrometry lab
- Industrial refrigeration & cold storage lab
- Industrial air conditioning & cold chamber lab
- Domestic automation with HVAC controls lab (KNX Protocol)
- Industrial automation with HVAC controls lab (KNX Protocol)
- Heat Transfer lab
- Fluid mechanics, Hydraulics & Pneumatics machinery lab
- Strength of materials lab
- DC machines & drives lab
- AC machines & drives lab
- CAD, CAM & CAE lab
- HVAC efficiency & controls lab
- Automotive electronics lab
- Vehicle air conditioning lab
- Emission system performance lab
- Engine performance lab

Practice Workshops

- Individual cubes to allow students to lay piping, fittings, ducting and install HVAC accessories
- Indian, European, American style of piping/ducting layouts for practice & replication
- Space with all connections in place to conduct final certification assessments
- Fitting workshop with all amenities
- Welding workshop with all amenities
- Foundation workshop with foundry, carpentry and smithy practices
- Height adjustable platforms up to 30 feet to allow students to work on various heights
- HVAC repair & maintenance workshop
- Central heating with various temperature control chambers simulation workshop
- Chassis system workshop
- Powertrain workshop
- Drivetrain workshop
- Dynamometry workshop

Support Infrastructure

- AC – 3 phase power supply (Uninterrupted)
- 64 KW back up generator
- Drinking water storage pump house (Booster)
- Industrial water storage pump house (Booster)
- Sewerage forced disposal (Pump)
- RO set up
- Rain/storm water storage tank
- Industrial water disposal set-up
- Sewage Treatment Plant (STP)

CAREER OPPORTUNITIES

FOR DIPLOMA ENGINEERS IN MECHANICAL ENGINEERING

Given below are some of the companies, which have huge requirement of Mechanical Engineers. At Chitkara Polytechnic, we are collaborating with major blue chip companies, so that you can start your career with flying colors.

 BLUE STAR	 TOYOTA	 HYUNDAI	 Enriching Lives
		 VOLTAS LIMITED	 MITSUBISHI
	 FUJITSU AIR CONDITIONING	 HITACHI	 Mahindra
 Lucas-TVS Limited	 HONDA The Power of Dreams	 DENSO	

Career opportunities abound in wide spectrum of industries as executives, specialists, technologists, Engineers or managers in:

- Mechanical & Automobile Engineering industry
- Cement, paper, chemical & other manufacturing industry
- Building services industry
- HVAC & Facility management industry
- Operations management
- Sustainable Design & Solutions
- Clean Energy & Automation
- Research & Development

3-Year Diploma in Mechanical Engineering program is recognized nationally and internationally. After completing the diploma, you can also enter the 2nd year of B.Tech degree through the lateral entry in Engineering institutions across the country.



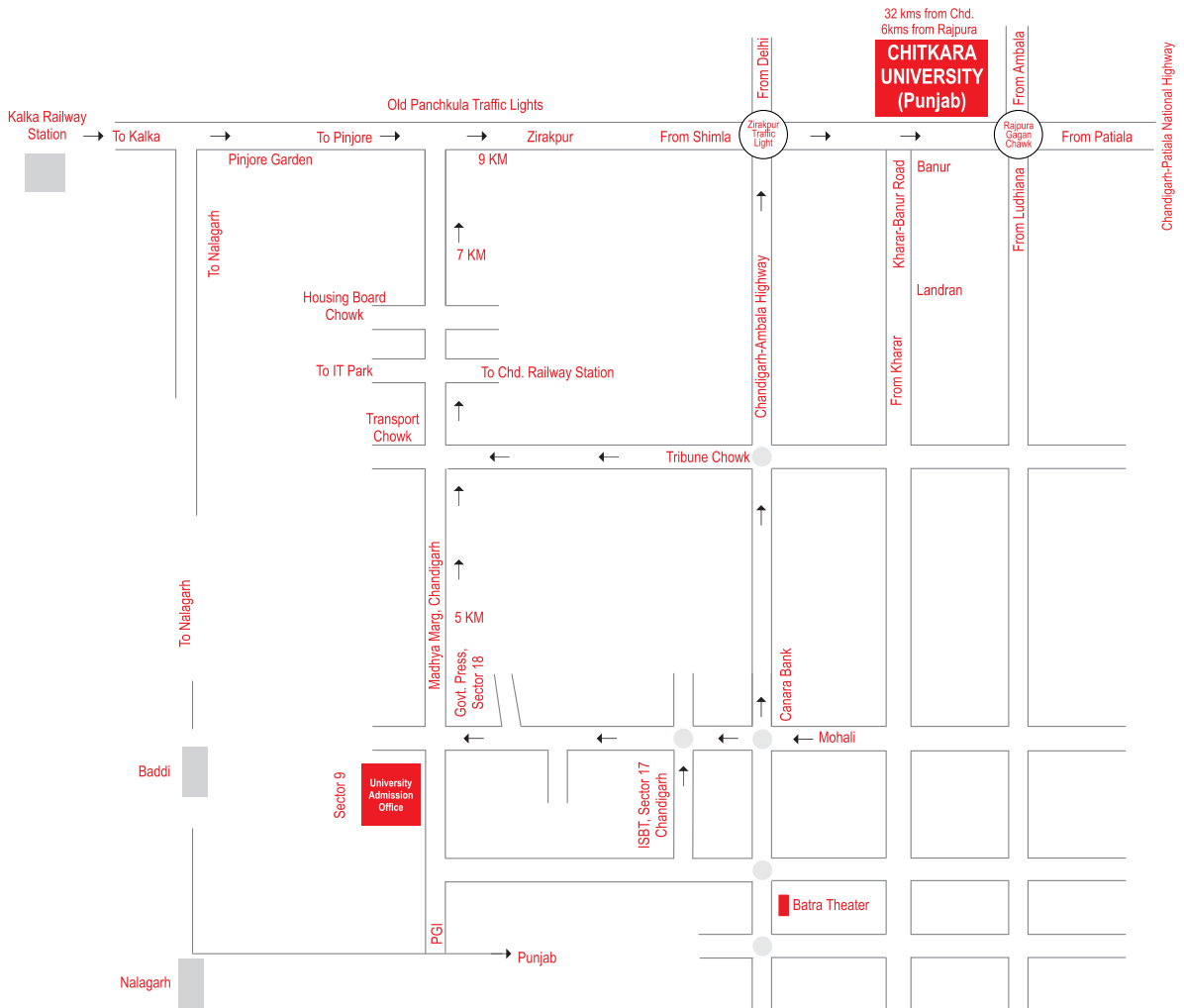
Eligibility Criteria for Diploma Programs

- The candidate should have successfully completed Class X with a minimum aggregate of 40% or an equivalent grade/CGPA from a recognized Board.
- Candidate having compartment in any subject will not be considered.
- Candidate will have to appear for a Personal Interview.

Program Fees

COURSE DURATION	1 st SEM	2 nd SEM	3 rd SEM	4 th SEM	5 th SEM	6 th SEM	*CAUTION FEE
3 Years	30,000	30,000	30,000	30,000	30,000	30,000	10,000

* Only at the time of admission



Chandigarh is conveniently linked to the rest of the country by air, road and rail network.

How to Reach Chandigarh by Air

Chandigarh has an airport just 11kms away from the City Centre. Major airlines connect the city with other major cities like Mumbai & Delhi.

How to Reach Chandigarh by Road

The city boast of an excellent road-network. It is also conveniently located within motor-able distance from a number of major cities of North India. National Highways 21 and 22 run through the city. Near perfect road condition and breathtaking view on either side offer a pleasant drive. It is approx. 250 kms North of Delhi & it takes almost 5 hrs to cover the journey.

How to Reach Chandigarh by Rail

The rail network serves the city conveniently. Chandigarh Railway Station is about 8kms from the City Centre in Sector 17. Important trains like the Shatabdi Express and the Himalayan Queen provide two train connections every day between Chandigarh and Delhi.



www.chitkara.edu.in/polytechnic
polytechnic@chitkara.edu.in

Admissions Helpline:
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