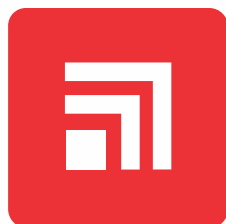


CHITKARA COLLEGE OF APPLIED ENGINEERING

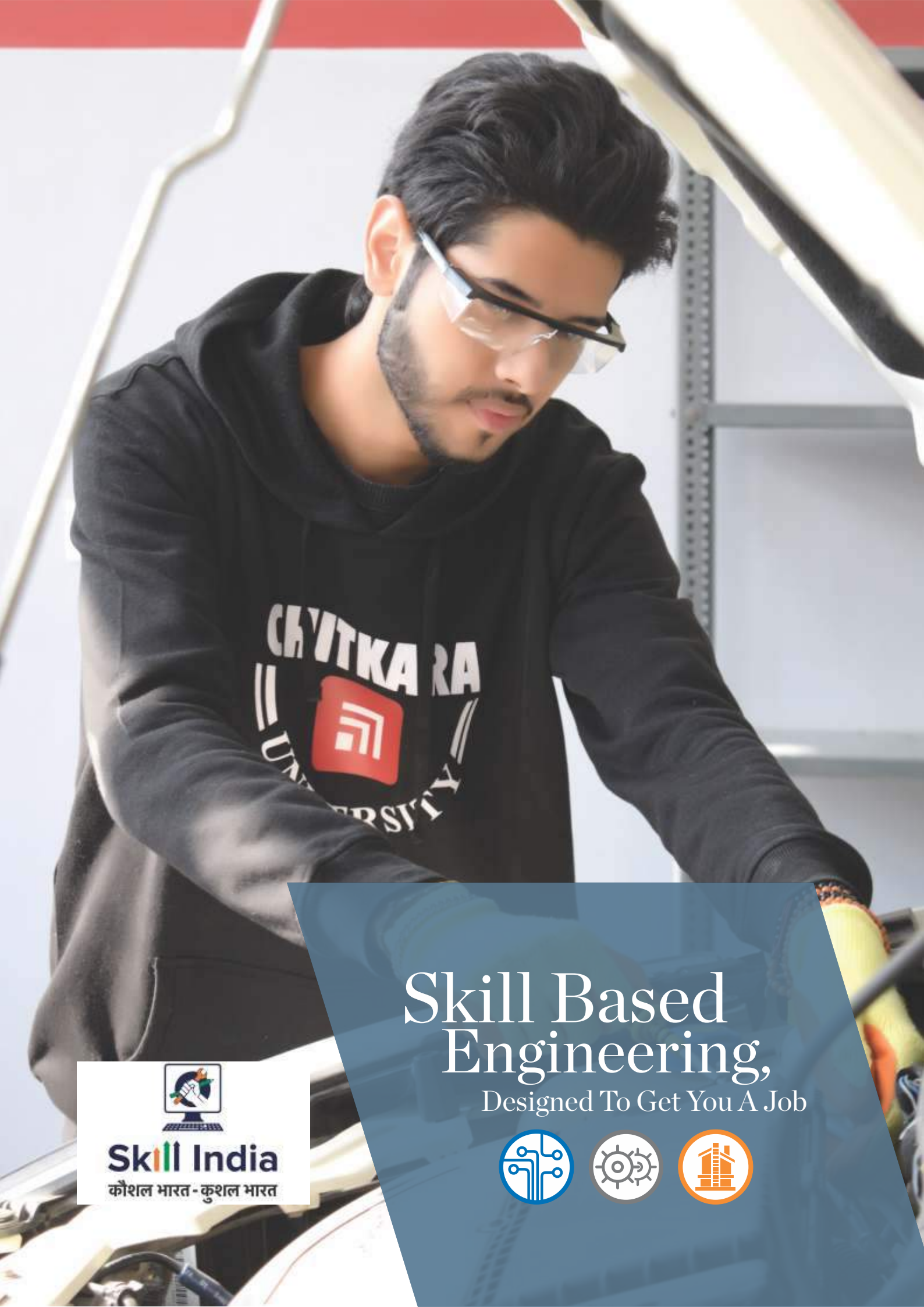
# SKILL BASED ENGINEERING PROGRAMS

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CIVIL | ELECTRICAL | MECHANICAL



**CHITKARA**  
COLLEGE OF  
**APPLIED  
ENGINEERING**



# Skill Based Engineering,

Designed To Get You A Job



**Skill India**  
कौशल भारत - कुशल भारत



# CHITKARA COLLEGE OF APPLIED ENGINEERING

At Chitkara College of Applied Engineering, we have designed unique Engineering Programs in collaboration with blue chip companies.

The programs have an intensive focus on hands-on learning with mandatory 1-Year internship. The entire focus is on learning practical skills, which helps getting excellent job opportunities across the world. Chitkara College of Applied Engineering has been established at Chitkara University to crystallize the 'Make in India' mission of Hon'ble Prime Minister Narendra Modi and to provide opportunities of skill development along with vertical mobility leading to gainful employment of diploma students joining Engineering Programs.

Chitkara College of Applied Engineering is a Chitkara Education initiative to provide students an opportunity to grow vertically & horizontally in their career paths with Civil, Electrical and Mechanical being specialisation. All our programs come with mandatory industry internship and are offered with 100% placement assistance with our partner organisations, which gives a successful career headstart in chosen industry domain.

The academic approach for students undergoing Engineering Degree at Chitkara School of Applied Engineering is intensive focus on practical skills with hands-on approach to classroom learning.

For the academic year 2021, we offer the following programs:

4-Year B.Tech in:

- B.Tech in Electrical Engineering
- B.Tech in Civil Engineering

For Diploma students entering 2nd Year of Engineering through lateral entry in:

- B.Tech in Electrical Engineering
- B.Tech in Mechanical Engineering
- B.Tech in Civil Engineering



# India Skill Development Mission



WorldSkills India is an initiative of the National Skill Development Corporation (NSDC) under the Ministry of Skill Development and Entrepreneurship, Government of India. NSDC, through its WorldSkills India initiative, has been leading the country's participation at WorldSkills International Competitions since 2011.

Students from Chitkara College of Applied Engineering have been active participants in the World Skills Competitions since its inception and have successfully brought laurels for the country at various International Competitions.





## Our Students Represent India in International Skill Competitions

### WORLDSKILLS COMPETITION, RUSSIA

Worldskills Competition is infact called Skills Olympics, which brings the very best talent across various skills from all participating countries, and is held in Kazan, Russia. Students from Chitkara College for Applied Engineering got selected by the Government of India and represented as Indian competitors for the Skill of Plumbing & Heating, and secured a place in Top 15 in the World Ranking.

### GLOBAL SKILLS CHALLENGE, AUSTRALIA

Government of Australia through TAFE & VET holds Global Skills Challenge (GSCC) once in every two years. Students from Chitkara College of Applied Engineering got nominated by the Ministry of Skill Development & NSDC to represent India at GSCC.

### TAITAJA SKILLS COMPETITION, FINLAND

Government of Finland through Skills Finland holds Taitaja Skill Competitions every year. Students from Chitkara College for Applied Engineering got nominated by the Ministry of Skill Development & NSDC to represent India at Taitaja.



# Skill India Mission @ Chitkara University

At Chitkara College of Applied Engineering, we have partnered with Industry Associations and Sector Skill Councils to align curriculum for our skills programs as per the National Occupational Standards designed by National Skills Development Corporation (NSDC).



# Experience Applied Engineering Education with the best of Industry Partners

For our skills programs at Chitkara School of Applied Engineering, we have developed solid collaborations with industry majors so that our students can acquire necessary skills and capabilities in our quest to make them “industry ready” right from Day 1.



# Electrical Engineering

Electrical Engineering is one of the largest and most diverse technological and engineering disciplines in today's world. Electrical Engineering is the study and application of electricity, electronics and electromagnetism for the development and maintenance of electrical and electronics equipments such as electric motors, navigation systems, medical devices, broadcast and communication systems, power generation systems, electrical distribution systems, electric grids etc., while keeping in mind the safety, quality, economic feasibility and sustainability of these products and systems.



# ELECTRICAL ENGINEERING

- 4 YEAR B.TECH IN ELECTRICAL ENGINEERING

- LATERAL ENTRY B.TECH IN ELECTRICAL ENGINEERING

## PROGRAM OBJECTIVES

India is growing — our economy, our population, our industry and our demand for Energy is also growing multifold with each passing day. Electrical Engineering Technologists are specialists in generation, transmission, distribution and utilization of Energy, and can further expand their career horizon into Electrical & Industrial Automation. It's a powerful career choice that demands good problem-solving skills combined with excellent domain knowledge with an eye for detail. As the world prepares for the challenges posed by climate change and ever increasing demand of quality products at a faster pace, if you want to make a difference in combatting this pressing global problem, as innovators of environment-friendly products and services to improve quality of life, this industry integrated Degree in Electrical Engineering with intensive specialisation will put you on the right track.

## PROGRAM OVERVIEW

Some of the key components of this specialisation will be:

- To 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.
- Maintenance, repair and production of electrical automation equipment and its systems.
- Procure, inspect and test electrical and electronic engineering materials.
- To select, operate, maintain, test and repair/replace electrical & electro-mechanical automation machinery used in various industrial appliances.
- Enable to do industrial installation including automation components, programming cum re-programming of logic controllers cum drives, laying cables, earthing, installing motors, drives with their accessories, wiring & testing of control circuits.
- Preparing estimates of different kinds of jobs in domestic, industrial automation in transmission and distribution systems to install, erect and commission the power & automation equipments.

## CUTTING EDGE LABORATORIES & FACILITIES

We have world-class labs including:

- Power Systems Research Lab
- Control Systems Lab
- Power Electronics and Drives Lab
- Virtual Instrumentation Lab
- Solar Energy Lab
- Measurement & Instrumentation Lab
- NXP Semiconductor Lab
- Schneider Electric - Centre of Excellence
- Building Automation Lab - Siemens
- Protection and Switchgear Lab
- Digital Simulation Lab
- Analog and Digital Circuits Hardware Lab
- Process Control Lab
- EDC and Device Research Lab
- Electrical Machines Lab
- Q-Max Technology Lab
- Industrial Automation Lab - Fuji Electric

# Specialisation in Electrical Engineering

## INDUSTRIAL AUTOMATION

### INTRODUCTION

As Automation is the heart of any industry - it has found its place and importance in industries to handle any sophisticated process to increase productivity with quality. A specialisation in Industrial Automation is a powerful career choice that demands good problem-solving skills combined with excellent domain knowledge with an eye for detail. The course includes a diverse range of theoretical and practical skill training, presented in the context of real applications and design experience.

Some of the key components of this specialisation will be:

- Knowledge and technical expertise of building, analysing, testing, operating and maintaining electrical, instrumentation, control systems and associated green technologies.
- Maintenance, repair and production of electrical automation equipment and its systems.
- Procure, inspect and test electrical and electronic engineering materials.
- Select, operate, maintain, test and repair/replace electrical and electro-mechanical automation machinery used in various industrial appliances.
- Industrial installation including automation components, programming and reprogramming of logic controllers cum drives, laying cables, earthing, installing motors, drives with their accessories, wiring and testing of control circuits.
- Estimate preparation of different kinds of jobs in domestic, industrial automation in transmission and distribution systems to install, erect and commission the power and automation equipments.

The importance of Automation Engineers in fields like Airport & Cargo Management, Railways, Building Automation and other areas like Automation in Manufacturing Industries, Process Industries shall be a paramount one. Further, with almost every industry spending major money on training its employees, this specialisation shall enable the industries to deploy students directly into the field with minimum on-hands training at their cost. Thus, the career opportunities are many, including roles in:

- Factory Automation
- Power Engineering
- Energy Management
- Operations Management
- Sustainable Design & Solutions
- Entrepreneurship





### CAREER OPPORTUNITIES

Electrical Engineers are in high demand in India. In the recent years, from house to companies every where there is a necessity of electricity to function, offering numerous opportunities to Electrical Engineers. These Engineers can work in Atomic Power Plants, Hydel or Thermal Power Plants. Job opportunities are ample in both Private & Public sector like, Railways, Civil Aviation, Electricity Board and Utility Companies, Electrical Design and Consultancy Firms, and all types of manufacturing industries.

Companies like ABB, Bajaj International Private Ltd, Crompton Greaves Limited, Siemens Ltd, Reliance Power Ltd, Oil and Natural Gas Corporation (ONGC), Bharat Heavy Electricals Limited (BHEL), Steel Authority of India Limited (SAIL), Coal India Limited (CIL), Power Grid Corporation of India Limited (PGCIL), Centre for Electronics Design & Technology, and Wipro Lighting are the biggest employers hiring Electrical Engineers.

Career opportunities abound in wide spectrum of industries as Executives, Specialists, Technologists, Engineers or Managers in:

- Factory Automation = Power Engineering
- Energy Management = Facility Management
- Operations Management = Sustainable Design & Solutions
- Entrepreneurship & own venture

### CAMPUS RECRUITMENT PARTNERS

Given below are some of the blue chip companies who hire our Electrical Engineering graduates:





A photograph of three male students in a workshop setting, focused on working on a mechanical engine. The student on the left wears a blue turban and a grey lab coat, using a blue-handled tool. The student in the center wears glasses and a grey lab coat, holding a component of the engine. The student on the right wears a grey lab coat and is also working on the engine. They are all wearing gloves. The background shows a bright, modern workshop with large windows.

# Mechanical Engineering

Mechanical Engineering includes the science and art of formulation, design, development and control of systems and components involving Thermodynamics, Mechanics, Fluid Mechanics, Mechanisms and the conversion of Energy into useful work. The lateral entry to B.Tech in Mechanical Engineering addresses both the quest to understand how things work and the desire to put this understanding to practical use. The student body is guided by faculty, who hold national and international recognition, are members of prestigious Engineering Societies and counted among the outstanding scholars in their profession.

# MECHANICAL ENGINEERING

## - LATERAL ENTRY B.TECH IN MECHANICAL ENGINEERING

### PROGRAM OBJECTIVES

There's a lot of technology at work in today's commercial and institutional buildings, from energy efficient boilers to complex Heating, Ventilation, Air Conditioning systems. Building systems require regular, skilled maintenance-mechanical and technical support. That's why Mechanical Engineers are in high demand.

### PROGRAM CONTENTS

Some of the key components of our program will be:

- Apply knowledge and technical expertise in building, analyzing, testing, operating and maintaining mechanical, electrical, instrumentation and control systems associated with heating, ventilation, air conditioning technologies, including relevant industry standards and code of practices.
- To do maintenance, repair and production of heating, ventilation, air conditioning equipments and its systems.
- To do fault diagnosis, repairing of heating, ventilation, air conditioning gadgets/domestic appliances, making joints and carrying out ducting & piping work.
- To select, operate, maintain, test and repair/replace mechanical/heating, ventilation, air conditioning machinery used in various industrial and domestic appliances.
- 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.

### CUTTING EDGE LABORATORIES & FACILITIES

At Chitkara University, we have state-of-the-art laboratories including Thermal Engineering, Heat-transfer Dynamics, Metallurgy, Metrology and Fuels. Modern computing facilities are available for students at the CAD & Computer Integrated Manufacturing Laboratories.

### SCOPE OF EMPLOYMENT

- In a wide range of exciting industries including Aerospace, Automotive, Bio-medical, Chemical, Computers, Electronics, Fossil and Nuclear Power, Manufacturing, Pharmaceutical, Robotics and Textiles.
- In areas of research & development, design, testing and evaluation, manufacturing, operations and maintenance, marketing, sales and administration.
- In Public Sector Units like Railways, ONGC, Indian Oil, ISRO, SAIL, NTPC, DDRO and IAF.

### CAREER OPPORTUNITIES

Career opportunities abound in wide spectrum of industries as Executives, Specialists, Technologists, Engineers or Managers in:

- Mechanical 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

### CAMPUS RECRUITMENT PARTNERS

Given below are some of the blue chip companies where students pursuing Mechanical Engineering from Chitkara College of Applied Engineering will get opportunities to work full time or as interns.



SIEMENS

DAIKIN

STERLING & WILSON

BLUE STAR

AECOM






# Civil Engineering

- 4 Year B.Tech in Civil Engineering
- Lateral Entry B.Tech in Civil Engineering





A photograph of a plumbing lab. In the foreground, three students (two men and one woman) are looking up at a complex system of pipes and robotic arms. The system is made of yellow, blue, and purple pipes mounted on a metal frame. Two robotic arms, one white and one pink, are visible. The background shows large windows and a bright, airy environment.

## Iconic Plumbing Lab @ Chitkara College of Applied Engineering

Civil Engineers design and build things that are part of our daily lives. They build our homes, schools, the places where we work, our roads, bridges, railways, and airports. They also build the things we don't see but use every day like the water system we use when we wash our hands or take a shower, and the electricity system we use to power our computers and charge our mobile phones. They also get rid of the things we throw away.

# 4-Year B.Tech in Civil Engineering with intensive focus on **PUBLIC HEALTH ENGINEERING CONSTRUCTION MANAGEMENT**

## INTRODUCTION TO CONSTRUCTION MANAGEMENT

The specialisation in Construction Engineering & Management provide students the knowledge of Civil Engineering with focus on modern construction materials, techniques and effective Construction Management practices. Through this program, Civil Engineers become capable of constructing special structures and can go on to become powerful Project Managers who can complete projects within a given schedule and budget. The focus is on analysis and design of Steel & Concrete structures.

Students can opt for special electives such as:

- Modern Structural Materials and Systems Design
- Shoring, Scaffolding and Form Work
- Construction Personnel Management
- Project Safety Management
- Quality Control & Assurance in Construction
- Quantitative Techniques in Management
- Contract Laws and Regulations

## INTRODUCTION TO PUBLIC HEALTH ENGINEERING

Public Health Engineering is the contemporary term for Sanitary Engineering, though Sanitary Engineering traditionally had not included much of the hazardous waste management and environmental remediation work covered by Environmental Engineering. Public Health Engineering Technologists will be there — whether it is to ensure that a water level is monitored and regulated, rivers are engineered to work with our expanding populations, water and wastewater treatment systems are designed to meet growing demands, or to assess and minimize the water usage in domestic & industrial applications.

As the world prepares for the challenges posed by faster depletion of precious natural resource (water), if you want to make a difference in combating this pressing global problem, as innovators of water-friendly products and services to improve quality of life, this water resources integrated degree in Civil Engineering will put you on the right track.







#### PROGRAM CONTENTS

Some of the key components of this specialisation will be:

- Apply knowledge and technical expertise in building, analyzing, testing, operating and maintaining civil, green water (fresh), grey water (waste) and associated green technologies, including relevant industry standards and code of practices.
- To do maintenance, repair and production of plumbing, sanitation and water resources equipment & its systems.
- Conceptualisation, visualisation and design of MEP services pertaining to Plumbing & Sanitation that includes water supply, water treatment, waste water disposal & recycling and solid waste disposal.
- Procure, inspect and test Civil & Plumbing Engineering materials.
- To do fault diagnosis, repairing domestic/industrial fresh water lines (cold & hot), making joints and carrying out pipe laying & plumbing work.

#### CAREER OPPORTUNITIES

Engineering companies all over the world are in need of Civil Engineers to develop new technologies, build better buildings, create better cities, get people to where they want to go in the best way possible, and counter the devastating effects of climate change. In other words, to improve the future of the planet. This means that the Civil Engineers of tomorrow are in demand in various fields such as:

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

#### CAMPUS RECRUITMENT PARTNERS

Given below are some of the blue chip companies for Civil Engineers specialising in Public Health Engineering & Construction Management:







**MAKE  
SOMETHING  
REMARKABLE  
UNIQUE  
MEANINGFUL  
BEAUTIFUL  
IMPORTANT  
AMAZING  
PROFOUND  
HAPPEN.**

**CHITKARA**  
UNIVERSITY



**IDRL**   
INDIAN DRONE RACING LEAGUE



**Coliseum**  
THEATRE

BIDDING THE

OPPORTUNITIES AREN'T GIVEN

THEY'RE MADE.



**CHITKARA** MADE



# Engineering Programs 2021

Computer Science | Information Technology

Global Software Engineering

Electrical | Electronics & Communication

Civil | Mechanical | Mechatronics

Marine Engineering | Nautical Sciences

**CHITKARA**  
UNIVERSITY



**PUNJAB**  
**HIMACHAL PRADESH**

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