



CHITKARA
UNIVERSITY



EXPLORE
YOUR
POTENTIAL

Academic Year 2022
Engineering | Pharmacy | Nursing | BBA




CHITKARA
UNIVERSITY



Engineering Education ahead of its time.

Engineering programs at Chitkara University do more than just develop world-class engineers and computer scientists. We help these bright minds develop into changemakers with global perspective, technical prowess and leadership skills to make a difference in the world.

Get ready to chart your course to a career that is as meaningful as it is successful. Every possible path starts with a common engineering core curriculum for the first year and a half, which lets you explore your options and discover the discipline that's right for you.

There are many forces behind our strength: our academic reputation, top rankings, varied specialisations, small class sizes and 100% campus recruitment.

Come Explore Your Potential at Chitkara University!



Dr. ASHOK CHITKARA
CHANCELLOR
CHITKARA UNIVERSITY

Selecting a university program marks the beginning of an exciting journey in your life. It expands your opportunities as well as adds life changing experiences.

Students from around the world are attracted to Chitkara University for several reasons. This includes our commitment to teaching excellence, research that makes a difference, industry partnerships and our tailored courses.

We look forward to having you as a part of the Chitkara fraternity.

STRONG ACADEMIC HERITAGE

Dr. MADHU CHITKARA
PRO CHANCELLOR
CHITKARA UNIVERSITY

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

There are many reasons for choosing Chitkara University. Our students go on to achieve successful careers. We teach in a hands-on and responsive manner. We provide a wonderful learning atmosphere and our research is world-class.

Our industry-relevant curriculum, global exposure, inclusive pedagogy, faculty mentoring and student resiliency are all in sync. This is evidenced by the excellent placements.



“The learning environment at **CHITKARA UNIVERSITY** is a unique combination of illustrious faculty, brilliant & intellectual students and proactive industrial collaboration.”





THE CITY BEAUTIFUL Chandigarh

A MILLION PEOPLE; INFINITE POSSIBILITIES

Chandigarh is undergoing rapid urbanisation and the transformation has been holistic and all-inclusive. Over the years, the city has made remarkable progress in terms of physical infrastructure and the business environment and has emerged as an economic growth centre with one of the highest per capita incomes in India.

Ample opportunities are available to work and grow in the IT, BPO and pharmaceutical sector in the region. It has proved to be a magnet for potential employers and employees.

The open hand is the official emblem of Chandigarh; it symbolises the city's philosophy of being "open to give" and "open to receive". Chandigarh has seen the growth of some major start-ups over the last few years. The city has kept in pace with the ever evolving education industry to become the one stop for all education needs. This makes Chandigarh ideal for students who wish to enjoy the blend of rich culture of the city life and the peaceful and calm environment that Chandigarh offers.

Chandigarh is easily accessible from Delhi, Haryana, Punjab and Himachal Pradesh and metropolitan cities with various modes of transportation, viz. buses, trains and direct flights both national and international from Dubai, Singapore, Sharjah, etc.





Step into a new world

You solve problems. Build. Innovate. You take things apart to see how they work and think about how to make them better—it's why you're drawn to engineering. And maybe you can already see a better way forward with cleaner energy, more efficient travel or new technologies that will change the world. We can help you get there.

Committed to your success from day one

We offer you the resources of a big university with the caring and personal attention of a small college. We believe the cornerstone of your education should be hands-on experience, which is why you'll take what you learn in the classroom and apply it to the real world from day one.

Experience speaks volumes to employers

When you graduate from Chitkara University, you'll be a functional, experienced engineer ready to contribute to the industry from the day you're hired—which is why many of our students have jobs lined up well in advance of graduation.



Discover a higher standard in education

Practicing what we profess

Our faculty is accomplished in the field as they are in the classroom. And with an open door policy and regular office hours, they're dedicated to guiding and mentoring you.

Building personal connections

Smaller classes mean you get individual attention. With average class sizes under 50 students, you'll get to know your professors.

Programs customized to your pursuit

Get the support you need in your studies to pursue internships, collegiate athletics or passions in different avenues of engineering.

Cutting-edge, career-ready curriculum

A state-of-the-art curriculum grounded in experiential learning, plus strong industry partnerships, mean our classes teach the skills employers want. Our faculty is always looking ahead, designing new classes that keep us at the forefront of innovation.

Engineering programs with a world-class reputation

At Chitkara University, our Engineering Programs will equip you with all the skills necessary to make you employable, enterprising and entrepreneurial. Engineering graduates are some of the most sought-after across the world and we will do our utmost to prepare you for future success.

MEETING THE DEMANDS OF INDUSTRY

No matter which course you choose, you can be certain that its content will be current and at the forefront of knowledge. Engineering is a rapidly advancing discipline and we want you to be ahead of the game.

KNOWLEDGEABLE & FRIENDLY FACULTY

As a Chitkara Engineering student, you'll learn from leaders in the field. Our faculty includes award-winning scholars, determined researchers, innovative entrepreneurs and celebrated personalities. They're experienced and inspiring with a genuine desire to help you achieve your full potential. Our tutors have considerable industry experience. Many of them are also actively involved in providing consultancy and knowledge transfer for local and national companies. With extensive business links, they bring expertise and innovation into their teaching. So not only will you gain an extensive knowledge of your subject, you will also get plenty of hands-on experience solving real world Engineering challenges.

A REPUTATION FOR INNOVATION

Our academic expertise has given us an international reputation for innovation. Year after year, Chitkara University has been ranked among the Top 10 Universities of the country for filing maximum patents which speaks volumes about our research team, state-of-the-art infrastructure and intensive focus on new ideas and technologies.





HIGHLY RATED PROGRAMS

Our Engineering programs are endorsed by leading external accreditation bodies for their ability to equip you to meet the requirements of the modern engineering environment. These accreditations include: The Institution of Mechanical Engineers (IMechE) and The Institution of Engineering and Technology (IET).

GLOBAL ENGINEERING

Our Engineering graduates have the option to study the first 2 years of Engineering programs at Chitkara University campus and then complete their Degree at over 100+ partner Universities across the world.

100% CAMPUS RECRUITMENT

We have established an unassailable reputation for very strong on-campus recruitments by sheer virtue of our intensive focus on making all our graduates "industry ready". 500+ leading Blue Chip companies visit our campus for hiring our Engineering Graduates.



Key Facts

Here are a few reasons why Engineering programs at Chitkara University Himachal Pradesh are rated as the best by our students, parents, alumni and industry.

HIGH GRADUATE EMPLOYMENT

Our Engineering graduates are highly employable. We have been achieving 100% campus recruitment record for our graduates since inception.

HIGHLY RANKED PROGRAMS

Our Engineering programs have been consistently ranked as one of the best in the country by NIRF, ARIIA, QS World University Rankings among others.

ENTREPRENEURSHIP START ME UP

Do you have the "E gene"? We help students turn an idea into a product, company, or social movement through our unique entrepreneurship programs and competitions.

SUPPORT IN MATHEMATICS

All our Engineering programs have intensive focus on Mathematics and Applied Sciences. Our team helps Engineering students from different Maths backgrounds succeed through special modules and workshops.

RESEARCH EXCELLENCE

Study with us and you will learn from faculty with a stellar reputation for research. We have 1 crore+ research grants & students can embark on research right from Day 1.

ELECTIVES AND SPECIALISATIONS

We offer more than one path to your goal — 70 percent of Engineering Undergraduate students pursue various specialisations and electives or a minor, often in a non-Engineering discipline.



INDUSTRIAL PLACEMENTS

Our courses include placement opportunities to give you valuable real-world experience and boost your employment prospects. We have strong links with organisations such as Google, Amazon, Infosys, L&T, Wipro and Virtusa among other 500+ employers.



GLOBAL PARTNERSHIPS

Our reputation has led to strong partnership with top global Universities across the world providing Engineering students unlimited opportunities for summer schools, semester exchange, international internships and work integrated learning.

WORK-READY WORLD-READY

Study with us and we'll equip you to become 'The Chitkara Graduate' – a world-ready professional, with the knowledge, attributes and expertise that employers look for.

SHOWCASE YOUR WORK

Each year we have annual design and research festival NOVEATE, an opportunity for graduating students to showcase their work to employers and industry specialists.

LEADING INNOVATION

Year after year, we have been ranked among the Top 10 Universities of the country for filing maximum patents which speaks volumes about our research team, state-of-the-art infrastructure and intensive focus on working with new ideas and technologies.

CUTTING-EDGE FACILITIES

Get hands-on experience building everything from microprocessors to industrial robots with 100+ cutting edge labs using the same generation of technology as leading industries.



Strong Industry Collaborations

Chitkara University has an intense focus on making each and every Engineering graduate industry ready. In order to make sure that our students have access to latest tools and technology, we have collaborated with industry majors ranging from software, semi conductor to automation and automotive sectors so that our curriculum and innovation labs are in sync with latest industry trends.





ARM®

ashirvad

ASHOK LEYLAND

AUTOMATION
ANYWHERE

aws

BOSCH

cādence™

CISCO™

ERICSSON

ESPA

ESSEL™
Innovating Excellence

EY

FCA
FIAT CHRYSLER AUTOMOBILES

Fuji Electric

Google™

HONDA

HYUNDAI

IMAGINxP

Infosys®

KONE

Mahindra

Microsoft

MITSUBISHI
ELECTRIC

NVIDIA®

NXP

Pega®

Quick Heal
Academy
Creating the Digital World

redhat.

SAP®

Schneider
Electric

SIEMENS

virtusa®
Accelerating Business Outcomes

vmware®

wipro

 **CHITKARA
ENGINEERING**



Be the talent employers want

80%

OF CHITKARA GRADUATES
ARE EMPLOYED
WITHIN 7th SEMESTER
OF DEGREE

72%

OF CHITKARA
GRADUATES
ARE PAID HIGHER
THAN THE MARKET
AVERAGE

42%

OF CHITKARA
GRADUATES
GET PRE PLACEMENT
OFFERS DURING THEIR
INTERNSHIP TENURE

Overview of Campus recruitment for our Engineering programs

Our Engineering graduates go on to great careers, as we're hands on and responsive in our teaching. We provide a great environment to study and our research is world class. We have established an unassailable reputation for very strong on-campus recruitments by sheer virtue of our intensive focus on making all our graduates "industry ready". Our brilliant campus recruitment is also the end result of our teaching approach which is learning-centric, enhancing knowledge, skills and understanding through practical experience.

12th batch of Engineering graduates from Chitkara University, Himachal Pradesh appeared for the campus recruitment process this year

Some major highlights of the campus recruitment for the batch graduating in the year 2021 were:

- 224+ companies came on-campus for hiring Chitkara Engineering students
- Out of batch of 433 around 50 students got "Dream Job Offers" from marquee companies such as Adobe, Deloitte, Carrefour, VECO, Amazon, Adani Power, HP Labs, Verizon, FICO, Evalueserve, MakeMyTrip, Reliance Industries, HP & Quick Heal
- 50+ offers given by StartUp unicorns Byju's / OYO / Zomato / swiggy / PlaySimple / GoJek / HyperDart GreyOrange / Quickr / PolicyBazaar / Grab Taxi / Bobble.Ai / Lightplane / Sprinkle Data / Travel Tek
- Some of the top on-campus recruiters were as follows -
Infosys / Wipro / Capgemini / Mindtree / Cybage / ITC Infotech / iNautix / Hitachi / Newgen
Unisys / Virtusa / Sears Holding / TechMahindra / NIIT / Mountblue / EXL Services / HighRadius.
Capgemini / Cognizant Technology Solutions / DXC Technology / Bajaj Finserv
- For Civil Engineering students, some of the major companies which visit our campus are -
L&T Construction / Sobha Developers / 3 C / Shapoorji Pallonji / Sterling & Wilson / Cinda Construction / Lafarge
Afcons / DLF / Raheja Construction / JSW Steel / Mahindra EPC

224+

campus recruiters
for batch of

433

Engineering Graduates



Super
Dream
Offers of
10 lakh+

100+

Companies Visiting
IITs / NITs also
Hired from our Campus

Highest Salary
offered by

GO JEK

30 Lakh

44

Dream Offers of

8 lakh

Students Recruited by



On Day1

+100

**SOME OF THE MAJOR COMPANIES THAT VISITED OUR CAMPUS
THIS YEAR AND HIRED OUR GRADUATES**

IT INDUSTRY





START-UPS





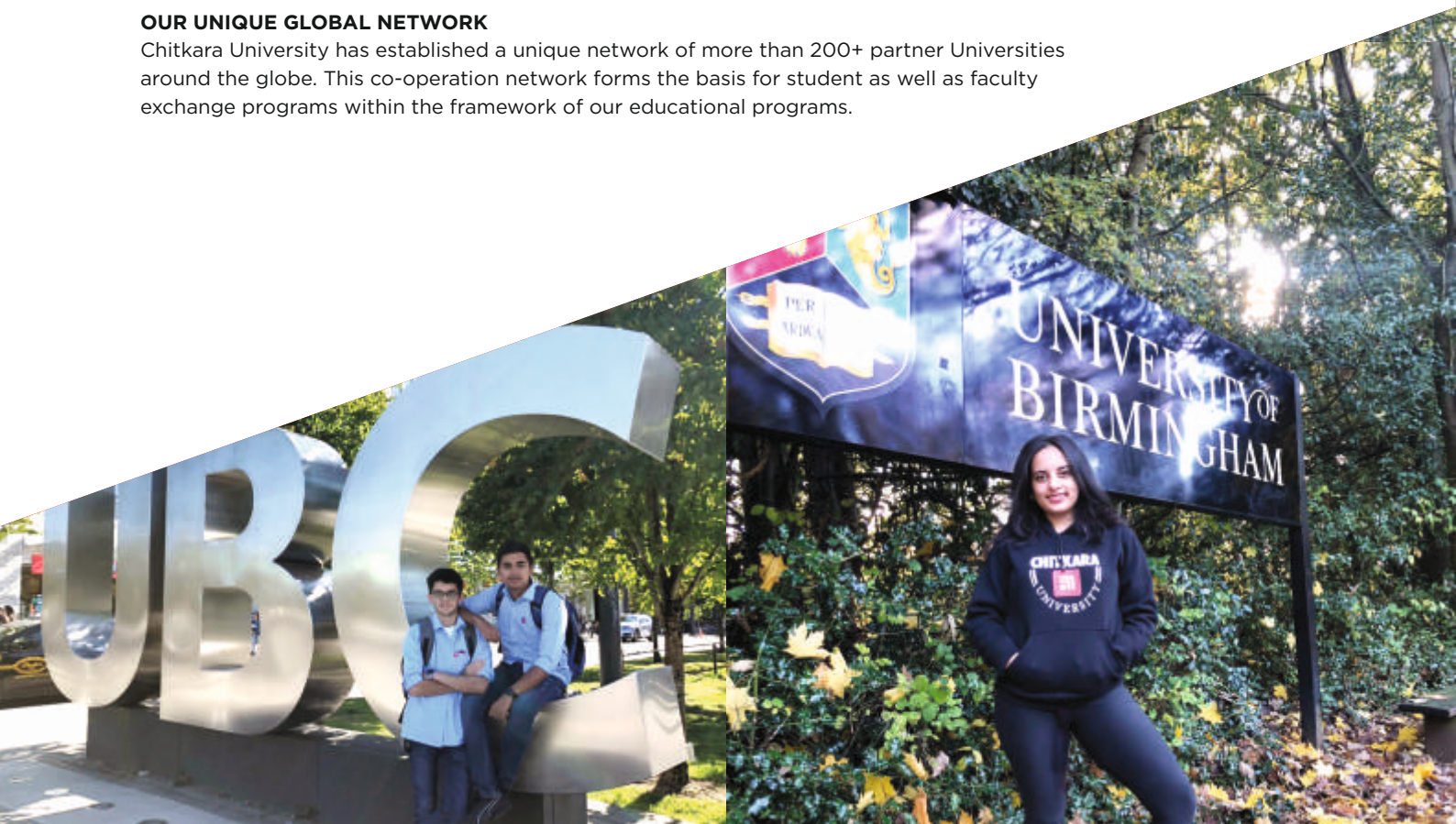
Global Engineering

Internationalisation and globalisation are key characteristics of today's work environment. The world has become a "Global Village" where economic, political, social and cultural dimensions are tightly intermingled. Such a platform offers students not only considerable opportunities but also higher complexity.

Chitkara University is prepared to face these new challenges, responding to professional and international commitments, by educating and training future Engineers to be "World Ready" for tomorrow's world and by helping them develop skill sets desired by future employers.

OUR UNIQUE GLOBAL NETWORK

Chitkara University has established a unique network of more than 200+ partner Universities around the globe. This co-operation network forms the basis for student as well as faculty exchange programs within the framework of our educational programs.



THE INTERNATIONAL EXPERIENCE

Combining an international education and study abroad experience is a strong asset in today's marketplace. It not only gives candidates a huge competitive advantage but also greatly contributes to students' personal development.

Engineering Students from Chitkara University enjoyed unforgettable experiences during their study abroad programs, such as semester exchange and summer school programs, at partner universities across the world.

We, at Chitkara University, believe that combining a state of the art education and study abroad experience is strongly desired in today's marketplace; it not only enhances candidates' professional, global and intercultural competence but also greatly contributes to students' personal development. Studying abroad is also an important opportunity to build a new network of friends and contacts from all over the world, which is a major asset in an increasingly interdependent world.

OUR INTERNATIONAL AND SUPPORTIVE STUDY ENVIRONMENT

With its growing number of international students and faculty, Chitkara University offers a truly international study environment. International faculty from partner universities teach short-term courses to students of Chitkara University during global events such as global engineering, automotive and business weeks.





The Global
University

Live independently.
Gain cultural awareness. Expand
your social network to around the
world. Make new friends who may
become your future business
collaborators in an increasingly
interconnected world.

Learn in a classroom on a
different continent. Experience
working in the real world, around
the world. Lend a hand to those in
need. There are so many new
experiences awaiting you at
Chitkara University.



THE WORLD IS

INTERNATIONAL STUDENT EXCHANGE PROGRAMS

Gain a global perspective

Chitkara University's robust
international exchange program with
more than 200 overseas universities
gives you the opportunity to
experience living on your own in a
different country. The networks you
build and experiences you encounter
will give you a global and culturally
sensitive perspective.

SUMMER STUDY PROGRAMS

Immerse in overseas
experience

Summer Programs are
short duration programs of
2-4 weeks in various
specialisations. It adds to
the international exposure
of the students.

SEMESTER EXCHANGE PROGRAMS

Foster stronger bilateral ties

Chitkara students have the
option to finish the last half of
their degree programs at our
partner Universities. Students
visit Partner Universities for six
months to one year for
completing their semesters
abroad.

Chitkara University's approach to Global Engineering Education rests on the belief that every student needs broad global knowledge and mindset. Our Engineering graduates will get many opportunities to globalise their University experience.



YOUR CAMPUS

OVERSEAS STUDY MISSIONS

Gain insights from industry leaders

Overseas study missions bring you right into the heart of multinational organisations around the world, giving you current insights on how they function through site visits. You will also experience a networking journey with prominent industry leaders, opening doors to a world of opportunities.

OVERSEAS INTERNSHIPS

Step into the global marketplace

Experience for yourself how industries and businesses operate, broaden your perspective and apply your skills and knowledge to real-world business operations.

GLOBAL EXPOSURE

Cultivate empathy

We regularly invite faculty from top Global institutions across the world. This exposure helps our students understand diverse cultural and educational contexts.

Computer Science Engineering

When you study Computer Science Engineering at Chitkara University, you receive a solid foundation in computer science and engineering principles and theoretical analysis and also learn how to apply them in your actual computing experience.

The best of technology companies recruit our computer science graduates every year giving them a broad range of career choices as they can organise, design and apply digital processing systems, bridging hardware and software.

4-Year Bachelor of Engineering

COMPUTER SCIENCE ENGINEERING

INTRODUCTION

The fundamental objective of Computer Science Engineering at Chitkara University is to provide our students with an opportunity to develop a firm foundation in Mathematics, Science and Design methodology of computing systems. Our course curriculum, which covers design, implementation and management of information system, of both hardware and software, has been designed keeping in mind a holistic learning approach, where students are equipped to apply their knowledge and skillset to 'real time' scenario in the field of Computer Science Engineering.

LEARNING OUTCOMES

- Design software or digital hardware system, component or process to meet targets within realistic constraints, such as economic, environmental, social, political, ethical, health & safety, manufacturability and sustainability.
- Gain knowledge of probability and statistics, including applications for Computer Science & Engineering.
- Gain knowledge of Mathematics through differential and Integral Calculus, Basic Science, Computer Science and Engineering Sciences.
- Gain knowledge of advanced Mathematics, including Linear Algebra, Numerical Computing Methods for Engineering and Discrete Mathematics.
- Gain knowledge of Algorithms and Data Structures.
- Apply design and development principles in the construction of software systems of varying complexity.
- Understand concept of programming languages.
- Learn computer organisation and architecture.

Your undergraduate degree in computer science is designed for flexibility and will provide you with ever-increasing opportunities to solve problems through computing. You might create your own start-up or work with one of the well-established powerhouses of the software industry. Chitkara University professors work closely with the top companies in the industry, so you'll have a chance to work together with individuals and groups that are changing the IT world.

Plus you'll be able to work side by side with some of the top minds in the business—your professors are not only experts in the computing field, but they are terrific mentors and will help you find the best application of your talents and interests. In addition, you'll be getting a superb liberal arts education that will enrich your technical and scientific training and help you to become a better problem solver, team member and manager.

SCOPE OF EMPLOYMENT

Blue chip companies including Google, Microsoft, Amazon, Infosys and Wipro among others have been recruiting our Computer Science Engineering graduates since the inception of the program.

Some roles for which our graduates get hired include:

- Developers and Specialists in high-end Services and IT-product companies
- Development Engineers, Technical Leaders and Managers
- Consultants, Solution Developers and Entrepreneurs
- Computing Specialists in Research Labs and Tech Providers
- System / Network Performance Analysts

Data Science and Analytics

Prepare for a future in Data Science, Analytics & Big Data. From Big Data to Cloud Computing, from astronomy to sports, data science is the foundation of our data-driven future and the demand for trained data scientists has never been higher.

Our daily lives generate more data than ever before and in that wealth of data lies insights that will change the world. Our Computer Science degree with Analytics as specialisation will give you the tools and the skills needed to create improved data-driven decision making in just about every imaginable domain.

Specialisation in Computer Science Engineering

DATA SCIENCE AND ANALYTICS

INTRODUCTION

Our program in Data Science and Analytics is designed to meet the growing demand for data scientists and data analysts with deep analytical and technical skills who can analyse massive amounts of data and extract information from complex data sources. Data Science is very important for organisations as it helps to harness their data and use it to identify new opportunities, leading to smarter business moves, more efficient operations, higher profits and happier customers.

Data scientists need expertise in the three core areas: computer science, mathematics and information management. They also need good critical thinking and effective communication skills.

Our interdisciplinary Engineering curriculum emphasizes the core areas of data science, including courses in programming, math, statistical modeling, machine learning and data management. Students learn all the aspects of the data science process from data collection and data understanding to model building and model validation and develop communication and critical thinking skills through real world applications.

The specialisation in Data Analytics equips students with the skills to draw out intelligent analysis of data, which is a crucial component in numerous business applications and supporting business decisions.

The program is designed to cater to the ever-changing needs and demands of the industry. Data Analysis experts are among the most sought-after professionals in IT sector with demand for skilled technocrats in that field outpacing other IT jobs by a wide margin. Some important components of this program are:

- Data Science principles, tools, and techniques to solve “real world” business problems and suggest suitable solution with relevant findings.
- Recognise issues in everyday business; apply Data Science for better understanding of data-driven management decisions to help get an edge over competition.
- Provide insights into leading analytic practices, design and lead iterative learning and development cycles.
- Produce new and creative analytic solutions, which can become a part of any business core deliverables.
- Get insights on how to improve business results by building data-fuelled products.

Some important skill sets taught in this specialisation:

Predictive Analytics | Data Analysis & Management | Data Visualisation | Business Intelligence | SAS Programming
Programming tools like R, Python

CAREERS

According to NASSCOM, the Data Analytics market will reach \$16 billion by the year 2025, growing eightfold from its market worth in 2016. India alone will require over 500,000 data scientists, as per various industry insights.

Types of companies / organisations looking for Data Analysts:

- Big IT companies who have an Analytics Practice - Infosys, TCS, Cognizant, Wipro, Oracle
- Analytics KPOs - Genpact, WNS, Evalueserve, HSBC, EXL
- In-house Analytics Units of large corporates - Citibank, Dell, HP, Spencers, Sears
- Core Analytics firms - Brainmatics, Fractal Analytics, Mu Sigma

Full Stack Development

With advancements in web-based mobile and desktop application development, Full Stack Developers and Engineers have emerged as one of the most strategic and coveted assets in the software industry. With a deep understanding of the Software Development Life Cycle, including planning, requirement gathering, design, development, testing, deployment and production support. Full Stack Engineers are able to drive projects far more efficiently and effectively and thus command a higher value in the job market.

Specialisation in Computer Science Engineering

FULL STACK DEVELOPMENT

INTRODUCTION

Our specialisation in Full Stack Engineering is designed for students who wish to start their career in the IT industry by mastering a full stack of multiple technologies, acquiring an ability to architect high impact solutions, envision and design great new products, solve complex problems and manage cross-functional collaborations.

The program is designed to build skills in high-demand areas such as SDLC, application development for web, mobile & cloud and DevOps.

Some important components of this course will be

- **Overview of Full Stack Engineering**
Overview of the modern application landscape; Typical structure of an end-to-end application: components and connections; Design considerations and implementation choices; Case study for each of the topics discussed.
- **Web Development**
Components of front-end web application development: User interfaces, rendering, Document Object Model, Event and State handling; Languages/tools such as HTML, CSS, JavaScript, AJAX; Web apps development frameworks; Components of back-end web development: Web Server essentials; Server Side scripting; REST architecture; Database interactions; Integration with code repositories.
- **Mobile Application Development**
Mobile application building blocks such as the screens (UI), background services; Communication between the application components; Application development using native multi-platform development; Interaction of applications with Internet resources, REST APIs, databases; Unit testing of applications; Integration with code repositories.
- **Cloud Native Development**
Basics of cloud computing. Different types of services; Virtual machines vs Containers deployment; Characteristics of cloud native application; Elements to build cloud-native applications; Cloud native architecture and micro-services; Design, decomposition of applications to micro-services; Developing micro-services; Interactions with data services and databases.
- **Agile and DevOps**
Overview of Agile methodology: Scrum, Test driven development, DevOps, Continuous Integration/Continuous Delivery (CI/CD); Code repository: Multi-user, distributed development, version control; Continuous inspection of code quality; Build and build tools; Automated Testing; Integration tools; Implementing CI/CD.
- **Deployment of Micro-services 2**
Containerizing applications by creating container configuration files and build processes; Manage deploying, scaling, and updating applications with micro-services using container management platforms such as Kubernetes; Configure and launch auto-scaling, self-healing clusters; Best practices for container management, when architecting and developing new microservices.
- **Capstone Project**
Full stack applications demonstrating the UI, server and database components of an end to end multi-user application; Usage of one or more well-known development frameworks; Demonstration of scalability and reusability by applying design concepts such as microservices and container-based deployment on the cloud; Demonstration of compliance with principles of agile and CI/CD.

CAREERS

Full Stack Developers design complete apps and websites. They work on all facets of development from front-end to back-end, database, debugging and testing. Full Stack Developers are more sought after because of their expertise in multiple technologies. They can handle all aspects of development and it can result in a more seamlessly created product.

Specialisation in Computer Science Engineering

CYBER SECURITY

in collaboration with

INTRODUCTION

Cyber Security is a branch of Digital Forensic Science pertaining to legal evidence found in the cyber space and digital storage media. Cyber Security technologies, processes and practices are designed to protect networks, computers, programs and data from damage or unauthorised access.

Specialisation in Cyber Security offers you the opportunity to gain a comprehensive and critical understanding of the theory and techniques of contemporary Cyber Security and how to apply these in response to “real-world” business problems. The specialist qualification in one of the most in-demand areas of IT, combining - advanced aspects of security, its practical application and the implications of security within a business.

As we all know, the technology industry has taken huge strides in the 21st century with inventions that brought the whole world to our fingertips. While it has made our lives undeniably easier, it has also opened up a world of possibilities for criminals who could make use of the information that has been put online for the wrong reasons. This is where cybersecurity comes in.

CAREERS

With digitalisation moving in the fast lane, it is estimated that a whopping 3 million cyber security professionals will be required in the country to support its fast-growing internet economy.

Our Cyber Security Engineers shall find excellent placements in research-oriented industries and top ranking global companies, with their careers ranging from:

- Cyber Security Specialist • Security Architect • Cyber Operations Analyst • System Administrator
- Security Software Developer • Security Engineer • Cyber Forensics Architect • Cyber Malware Analyst





Specialisation in Computer Science Engineering

GAME DESIGN & AUGMENTED REALITY

INTRODUCTION

We have all played and enjoyed games, but how do people actually design them? What are the basic elements? How do designers create an experience for the player? What about prototyping and iterating? This specialisation in Game Design will help students explore the above questions and much more.

Students will be introduced to Game Design - its concepts, emphasising the basic tools: paper and digital prototyping, design iteration and user testing. They will also learn about the challenging, multi-disciplinary subject area of Augmented Reality (AR), where they will learn the skills required to create VR/AR simulations, games, visualisations and apps.

Students will study the creation of digital content and the practical application of VR/AR technologies. Some highlights of the program are:

- Research and develop your own VR/AR concepts by creating 2D and 3D digital artwork.
- Study the evolving theories and principals of design-led VR/AR. This includes designing for immersive environments, location-based mobile apps and wearable technologies.
- Research and explore theories of user-centred design and user experience.

CAREERS

According to Statista, Gaming and AR market size was around \$6.1 billion in 2016 but is expected to reach \$215 billion by 2023. Although companies have spent several years developing and refining this technology, demand for skilled professionals is experiencing a major uptick as more technologies make it out of R&D and enter the marketplace.

- Developers typically collaborate closely with Software Designers and 3D Artists, as well as Design Architects and Engineers who plan and create the hardware on which XR Software runs.
- System Validation Engineers test systems and help resolve technical issues, and circle back with developers to ensure applications get modified accordingly.
- Project Managers coordinate and oversee entire development teams, interface with other business units and work with clients.

COMPUTER SCIENCE ENGINEERING

DESIGN IS THE
FUNDAMENTAL SOUL
OF A HUMAN-MADE
CREATION THAT ENDS
EXPRESSING ITSELF
IN SUCCESSIVE OUTER
LAYERS OF THE PRODUCT
OR SERVICE
STILL JOBS

User Experience Design

At Chitkara University, we offer Computer Science Engineering with specialisation in User Experience. This specialisation focuses on teaching students how to design digital products that provide relevant user experiences - understanding the needs of the users. Creating a product roadmap based on these user needs and implementing the principles of UI/UX design to get an easy to use and simple product.

Specialisation in Computer Science Engineering

USER EXPERIENCE DESIGN (UX/UI)

UX Design refers to the term “User Experience Design”, while UI Design stands for “User Interface Design”. Both elements are crucial to a product and work closely together. But despite their professional relationship, the roles are distinct different, referring to very different parts of the process and the design discipline. Where UX Design is a more analytical and technical field, UI Design is closer to what we refer to as graphic design, though the responsibilities are somewhat more complex.

Chitkara University has the best in-house faculty, accompanied with guest faculty from Industry with expertise in UI/UX domain. This specialisation has been devised and designed keeping in mind the UX Industry, considering the needs of the job market and thus offers excellent placement.

SOME KEY COMPONENTS OF THE PROGRAM ARE:

- Understanding the fundamentals and principles of UI/UX Design.
- Knowledge of tools and process used in UI/UX Design, with a mix of classroom assignments, projects, field work, industry projects, internships and shadow learning.
- Skillset required in “real-life” design problems through visual design tools and introduction to 6D.
- Quizzes, classroom assignments, field work etc. with “real-life” scenarios. Students are encouraged to come up with efficient solutions.
- Hands-on learning with the process of research, testing, development, content and prototyping to test for quality results.

CAREERS

The day-to-day business operations of companies across the globe have changed with advancement of technology and rapid digitalisation. 'Design' of digital product influences business decisions and that's the primary reason of the high demand of UI/UX Designers in industry.

Career Path

- | | | |
|------------------------|-----------------------------|--------------------------|
| • User Researcher | • Information Architect | • Wireframe Expert |
| • Interaction Designer | • Information Visualisation | • Visual Designer |
| • Design Manager | • Usability Analyst | • Automotive UX Designer |
| • Chat UI Designer | • Voice UI Designer | • Haptic UI Designer |

SOME OF THE COMPANIES THAT HIRE OUR UI/UX STUDENTS





industry collaboration with

virtusa

At Virtusa, they accelerate business outcomes for their clients through their expert information technology consulting and outsourcing services. They support a wide variety of Forbes Global 2000 firms with services that span the entire spectrum of the IT services lifecycle. Their industry-leading solutions transform businesses not only for a better today, but also for a better future.

VIRTUSA IS ONE OF THE RENOWNED DAY 1 CAMPUS RECRUITER ACROSS TOP UNIVERSITIES IN THE COUNTRY



5-YEAR B.TECH-M.TECH INTEGRATED COMPUTER SCIENCE ENGINEERING

Chitkara University in collaboration with Virtusa has introduced a unique 5-Year integrated Engineering program. Typically, it takes 2-Years to do M.Tech if you choose to pursue it after finishing B.Tech and some work experience.

With this program you will save one complete year and get integrated an B.Tech-M.Tech degree from Chitkara University in industry collaboration with Virtusa, one of the leading global blue-chip IT company.

Some of the major highlights of the program:

- Intensive focus on Full Stack Engineering from Year-1.
- Interactive sessions with Virtusa software architects every semester.
- Problem based learning approach with Virtusa real life case studies.
- Summer internship opportunity at Virtusa offices after the completion of 2nd year.
- 1-Year Internship in the 5th year at Virtusa offices with minimum monthly stipend of Rs. 15,000.
- Assured placement in Virtusa with joining salary of more than 5 lakh after the completion of the program.

A large, 3D white logo of the word "virtusa" is mounted on a grey, textured building facade. The letters are bold and modern, with the 'v' and 'i' being lowercase and the rest being uppercase. The building has vertical lines and is set against a blue sky with some clouds.



PROGRAMS IN COMPUTER APPLICATIONS

3-Year BCA | 5-Year Integrated BCA-MCA | 2-Year MCA (Lateral Entry)

PROGRAM OVERVIEW

Information technology and communication systems have become critical components of almost every company's strategic plan. Companies who want to take advantage of the new information technologies and communication systems require expert professionals, who can apply computer science principles to solve problems produced by the interface between business and technology. In our BCA | MCA programs, students are exposed to various areas of Computer Applications including the latest developments in the industry.

Our program in Computer Applications caters to the foundation of computing principles and business practices and train the students to analyse problems in a wide range of applications. This program provides exposure to the students to enterprise software management methodologies.

Some of the major topics covered in the BCA | MCA programs are:

- Introduction to Computer Organisation
- Data Structures
- Programming in Java
- Computer Architecture
- Software Engineering
- Operating Systems
- Digital Image Processing
- Programming in C & Algorithm Design
- Object Oriented Programming in C++
- Microprocessors
- Database Management Systems
- Computer Networks
- Computer Graphics
- Compiler Design

PARTNERSHIP WITH IT INDUSTRY

Marquee companies such as Amazon, VMWare, Virtusa, Red Hat, Automation Anywhere and Cisco Network have developed & deployed IT industry relevant curriculum on emerging technologies for our Computer Application programs.



5-YEAR INTEGRATED BCA-MCA

Students enrolling in this program can pursue Bachelor's as well as Masters of Computer Application without taking a break. Through this program students not only get a world class, "industry-ready" curriculum but also end up saving a year. After the completion of 3-Year BCA coupled with intensive classes, students get to spend the last 2-Years as an intern in IT companies.





EMPLOYMENT AREAS

- Software Development Companies • Technical Support • System Maintenance • Consultancies
- Computers and Related Electronic Equipment Manufacturers • Schools and Colleges
- Security and Surveillance Companies • Traffic Light Management • Desktop Publishing
- Financial Institutions • Government Agencies • Insurance Providers • Banks

JOB TYPES

- Software Developers • Systems Administrators • Project Manager • Chief Information Officer
- Computer Programmers • Computer Training • Computer Systems Analysts • Computer Scientists
- Computer Support Service Specialist • Database Administrators • Computer Presentation Specialist
- Commercial & Industrial Designers • Independent Consultants • Information Systems Manager
- Software Publishers

CAMPUS RECRUITERS FOR BCA & MCA GRADUATES

Some of the major companies that visited Chitkara University and hired our graduates:



CHITKARA
UNIVERSITY



Pharmaceutical Programs

Approved by Pharmacy Council of India
4-Year B. Pharmacy
3-Year B.Sc in Pharmaceutical Chemistry

Nursing Programs

Approved by Himachal Pradesh Nursing Council
4-Year B.Sc Nursing

Explore
Your
Potential





4-Year Bachelor of Pharmacy (B.Pharm)

Approved by Pharmacy Council of India

Bachelor of Pharmacy (B.Pharm) is a 4-Year undergraduate program designed to introduce students with the properties and impacts of Pharmaceutical drugs. The program additionally helps students in developing the skills essential to counsel patients about medication and use of drugs.

B.Pharm program at Chitkara University will focus on making our students understand the mechanism of drug action, its dynamics & kinetics, visualise and work on laboratory techniques and improvements. Also, it prepares them to interpret data arising out of research experience into production, quality control & quality assurance. The program concentrates on preparing the students and training them for industry-ready holistic pharmaceutical care in the practice setting. Students will learn how to use modern Pharmaceutical tools, Software and Equipment to analyse & solve problems.

The industrial visits and equally important practical sessions ensure students receive a perfect exposure to the real-world situations while learning. The course has been designed to cater to the requirements of a large horizon of healthcare needs for Pharmaceutical and Formulation Industry, Clinical Pharmacy, Pharmacovigilance, Research & Development of drugs including Drugs of Natural Origin, Health Regulatory System and Academia. There will be focus on getting our students the ability to Design Formulation & Synthetic Process as per the needs and specifications of the Pharmaceutical industry.

In addition, the program also concentrates on preparing the students and training them for industry-ready holistic Pharmaceutical care in the practice setting. The industrial visits and practical sessions ensure that students have perfect exposure to the real-world situations while learning. The course has been designed to cater to the requirements of a large horizon of health care needs for Pharmaceutical and Formulation Industry, Clinical Pharmacy, Pharmacovigilance, Research and Development of drugs including Drugs of Natural Origin, Health Regulatory System and Academia.

At Chitkara University, there is huge focus on getting our B.Pharm students industry ready for Pharmaceutical industries, Hospitals, Patent cells, IPR sections, Clinical Research Organisations, Retail Pharmacy and other opportunities



3-Year B.Sc. Pharmaceutical Chemistry

Bachelor of Science (B.Sc.) in Pharmaceutical Chemistry is an undergraduate program in the field of pharmaceutical chemistry. B.Sc. Pharmaceutical Chemistry is a three-year programme. opportunities in a wide variety of career option in pharmaceutical industries, quality control, API production and analytical chemistry.

Undergraduate students will develop an extensive knowledge in basic chemistry, and also cover advanced topics relevant to modern pharmaceutical chemistry as well as underlying theory, the course covers the application of those skills into areas of Pharmaceutical Industries:

These fundamental skills will help you to succeed in this diverse and dynamic sector. Experts from Industry also share their knowledge with students in a variety of formats, including lectures, workshops, seminars, and tutorials. We have a state-of-the-art laboratory where students can gain knowledge and practical experience.

After pursuing pharmaceutical chemistry, graduates can get job in:

- Drug Control Administration
- Manufacturing
- Pharmaceutical Companies
- Analytical Divisions
- Quality Control
- Research



4-Year B.Sc in Nursing (Basic)

The global population is rising but the number of healthcare workers is decreasing relatively. With more and more nurses migrating abroad, India is facing an acute shortage of faculty and clinical practitioners. This necessitates the initiation of more and more educational institutions to meet local, national and global demand for health care providers. Keeping in view the World Health Organization's (WHO) theme of 'Working Together for Health', Chitkara University has initiated Nursing Program to train and develop quality nursing staff to provide health care services at the grassroots to meet the global demand. The overall aim of Nursing Program is to prepare a graduate Nurse to serve as a frontline worker in the clinical or community field and the educational arena.

Nursing programs at Chitkara University are an excellent opening for candidates who aspire to be trained in India as per international standards. Efforts have been made to provide various facilities to develop an all round healthy individual who will carry the 'Health' of the needy on their strong shoulders ahead. Students are given training in developing basic skills in the laboratory, in simulated conditions, before they are exposed to actual hospital situations. The faculty is highly qualified and competent in providing excellent theoretical and practical training to students.

Our Pedagogy

Through their pioneering efforts, our Nursing Programs aim to create leaders in the nursing profession. . Our innovative programs are responsive to the market needs and have been designed keeping in mind the rapid advance in the healthcare sector in India as well as abroad. The curriculum lays emphasis on a holistic approach to Nursing Care to ensure an all-round growth of the students. Student Nurses will be trained to meet the international standards of professionalism and maintain the highest standard of clinical practice.



Chitkara University boasts of state-of-the-art labs for Nursing Programs such as:

Nursing Laboratory having hospital-style beds with manikins, CPR dummies, several audio visual aids and equipment for providing the students hands-on training to develop skills in Nursing procedures.

Community Health Nursing Laboratory having large tables as working area and equipment needed for providing services in the community areas. In addition, the laboratory has specially designed community bags to carry the necessary equipment for homecare like thermometer, articles for urine testing, growth monitoring, dressing, physical examination, etc.

Obstetric and Gynecological Nursing Laboratory having all the equipments including delivery table with normal delivery manikins and delivery sets in order to provide the students with competency to develop into a skilled and competent midwives.

Pre-clinical laboratory with all equipment including consumable and non-consumable items for providing the students with the knowledge of basic subjects such as Human Anatomy and Physiology, Biochemistry and Microbiology so that they are able to correlate this knowledge with practical understanding of disease conditions.

Computer Laboratory is fully equipped to develop the computer literacy in the undergraduate students as IT has a positive impact on healthcare delivery system worldwide, particularly in the areas of disease control, diagnosis, patient management and teaching.

Some special features of the nursing programs at Chitkara University are:

- Rich clinical experience in all specialisations.
- Additional modules are made available to the students.
- Communication Skills and Personality Development.
- Principles & Practices of Management and Medico-legal issues offered to the graduate students during the four-year program.
- Workshops on Basic Life Support (BLS) and Advanced Cardiac , etc. Life Support, Advanced Trauma Care and Disaster Management Programs
- Assistance for placement in reputed Institutions of India and abroad.

Coliseum
THEATRE

BIDDING THE


OPPORTUNITIES AREN'T GIVEN
THEY'RE MADE.

 **CHITKARA** MADE



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Jammu & Kashmir : 95011 05716

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