

**CHITKARA**  
UNIVERSITY



**FOR THOSE SEEKING A CAREER      WITH A PULSE**

**INDUSTRY ENDORSED PROGRAMS IN**  
**PHARMACY | ALLIED HEALTHCARE**  
**NURSING | OPTOMETRY | PHYSIOTHERAPY**

**VIEW BOOK 2023**



Explore  
**Your**  
Potential



## **Pharmaceutical Programs**

Approved by Pharmacy Council of India

- 4-Year B. Pharmacy [Punjab | Himachal Pradesh]
- 6-Year Doctoral Program in Pharmacy [Pharma.D]
- 2-Year Master in Pharmacy [M. Pharm]
- 2-Year M.Sc in Pharmacovigilance & Clinical Research
- 2-Year M.Sc Chemistry

## **Allied Healthcare Programs**

- 4-Year B.Sc | 2-Year M.Sc Medical Laboratory Science (MLS)
- 4-Year B.Sc | 2-Year M.Sc Medical Radiology & Imaging Technology (MRIT)
- 4-Year B.Sc | 2-Year M.Sc Operation Theatre Technology (OTT)
- 4-Year B.Sc in Dialysis Therapy Technology (BDTT)
- 4-Year B.Sc (Hons.) in Nutrition & Dietetics

## **Nursing Programs**

Approved by Indian Nursing Council of India

- 4-Year B.Sc Nursing [Punjab | Himachal Pradesh]
- 2-Year Post Basic B.Sc Nursing
- 2-Year M.Sc Nursing

## **Optometry Programs**

- 4-Year Bachelor of Optometry [B. OPTOM]
- 2-Year Master of Optometry [M. OPTOM]

## **Physiotherapy Programs**

- 4.5-Year Bachelor of Physiotherapy [BPT]
- 2-Year Master of Physiotherapy [MPT]



**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 are invested in the growth of every student and ensure they evolve into well rounded personalities, subject experts, creative thinkers and future-facing individuals - set to grapple with real world challenges and become changemakers of tomorrow.

We look forward to welcoming you as a part of the Chitkara University 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.



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

**J**

# CHITKARA UNIVERSITY PUNJAB

Chitkara Educational Trust established its Punjab campus in the year 2002 on the Chandigarh-Patiala National Highway which is 30 kms 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 recognised University with the right to confer degrees as per the sections 2(f) and 22(1) of the UGC Act, 1956.





# CHITKARA UNIVERSITY HIMACHAL PRADESH

Chitkara University was established in the year 2008 by the Himachal Pradesh State Legislature under the "Chitkara University Act". Chitkara University is a government recognised University with the right to confer degrees as per the Sections 2f and 22(1) of the UGC Act, 1956 and is included in the list of universities maintained by the University Grants Commission. Our sprawling campus located at Atal Shiksha Kunj in Barotiwala is 32 kms from Chandigarh and 12 kms from Pinjore.

**CHITKARA  
UNIVERSITY**



# THINGS WE'RE PROUD OF

THERE ARE SO MANY REASONS TO CHOOSE CHITKARA UNIVERSITY. HERE ARE A FEW REASONS WHY WE BELIEVE YOU'LL LOVE US AND BE PROUD TO JOIN US.

## STRONG ACADEMIC HERITAGE



Chitkara University has been established and managed by passionate academicians with the sole mission of making each and every student "Industry ready".

## INDUSTRY-LED COURSES



We maintain close links and associations with leading blue-chip companies to deliver our academic programs and ensure that our courses are relevant, practical and deliver the skills in demand, allowing our graduates to hit the ground running.

## TOP 20 RANKING



Chitkara University has been consistently ranked among the top 20 Private Universities of the country.

## COUNTED AMONG THE BEST



Our programs are consistently ranked among the top 50 in the country.

## WORLD-CLASS RESEARCH EXCELLENCE



With more than 200 patents and project funding from leading organisations such as DST and HP, our researchers, staff and students work across disciplines to extend the boundaries of knowledge. We are being recognised nationally for pioneering research in Nanotechnology, Mobile Learning, Robotics, Renewable Energy and Mechatronics.

## TOP SKILLS



There is an intense focus on developing communication skills, team work and leadership for each and every student.

## LEARNING BY DOING



Our curriculum is based on the framework of strategic competitiveness, which teaches the concepts of creativity, entrepreneurship, innovation, sustainability, leadership and incisive decision making.

## 5 STARS

All our institutions and academic programs are recognised and approved by UGC and various regulators such as NAAC | AICTE | COA | NHMCT | INC.

## CAMPUS PLACEMENTS



Chitkara University has established an unassailable reputation for strong on-campus recruitments. Our students have gained employment in diverse professional roles and areas across the world. From managing hotels to discovering new drugs to helping patients in hospitals to analysing the stock market, a Chitkara University degree can lead to varied and rewarding career paths.

## LEARN FROM THE BEST



You'll work with some of the brightest and most inspiring academics, lecturers and researchers in the world.

## MODERN FACILITIES



Chitkara University has made huge investments in developing student facilities - giving our students access to state-of-the-art labs, design studios, libraries, sporting and social facilities.

## BEST LOCATION



With a high quality of living and vibrant student mix, Chandigarh, also known as City Beautiful, has rightfully earned its place in the 'Times 15 Best Asian Spots'.



## MORE CEOs

Industry leaders from across sectors visit our campus and interact with our faculty as well as student community to groom them for future leadership roles.

## LEADING INNOVATION

Chitkara Innovation Incubator helps turn students' business ideas into reality. Student ventures with scalable, commercial potential are given access to high tech, a collaborative office space, and are paired with industry mentors to develop scalable business plans and market testable products and services.

## TRAVEL THE WORLD

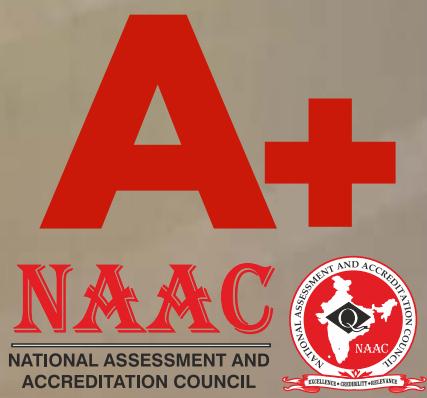


At Chitkara University, we offer over 170 exchange destinations to consider.

## SAFE & SOUND

We take great pride in looking after our students. We have zero tolerance to ragging.





## CHITKARA UNIVERSITY IS NAAC A+ ACCREDITED

Chitkara University has been accredited with the coveted A+ grade by National Assessment and Accreditation Council (NAAC) which now firmly positions us among the top 5% Higher Education Institutions of the country. This bears testimony to our unique blend of distinguished faculty, brilliant and intellectual students, world class research labs coupled with proactive industry collaborations.

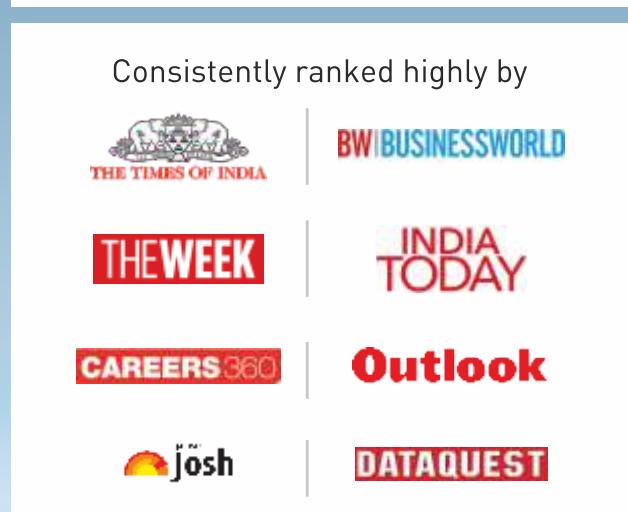
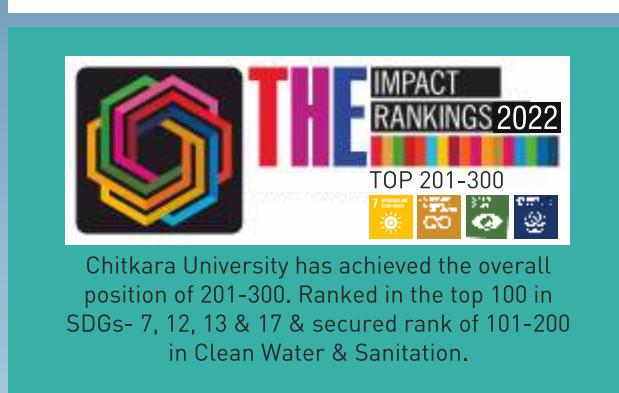
With its brand of academic excellence and innovation, Chitkara University provides groundbreaking education and ensures you have access to vast recruitment opportunities with top companies.

Sincere thanks to all our students, parents and industry stakeholders for placing their trust in us.





# COUNTED AMONG THE BEST



# CHITKARA UNIVERSITY





# 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 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 sectors in the region. It has proven 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 pace with the ever evolving education sector to become one stop destination for all education needs. This makes Chandigarh ideal for students who wish to enjoy the blend of rich culture of city life and the peaceful environment that Chandigarh offers.

Chandigarh is easily accessible from Delhi, Haryana, Punjab, 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.

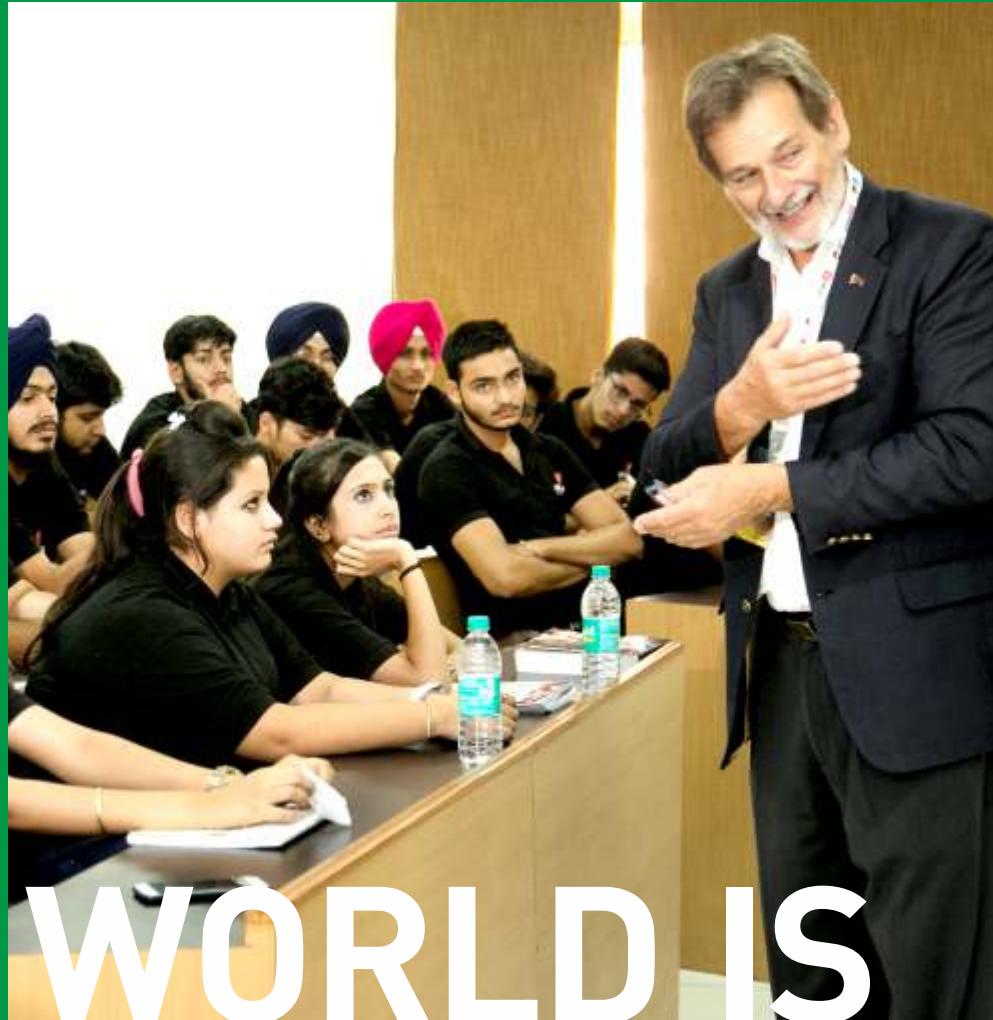




**The Global  
University**

Live independently.  
Gain cultural awareness.  
Expand your social network  
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.  
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 more global and culturally sensitive perspective.

## **SUMMER STUDY PROGRAMS**

Immerse in overseas  
experience

Summer Programs are short duration programs of 2-4 weeks on 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 part 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 Education rests on the belief that every student needs global knowledge and a mindset. Our 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.



## Embark on Research from Day One

At Chitkara we believe every student benefits from being taught by experts active in research and practice. You will discuss latest ideas, research, discoveries and new technologies in seminars. Students will actively be involved in a research project themselves. Through Chitkara University Research and Innovation Network (CURIN), our researchers, staff and students work across disciplines to extend the boundaries of knowledge. 40 Centres of advanced research under CURIN build and sustain Chitkara University's competitive advantage through leadership. These centres are the locus of research for collaborative groups of investigators pushing the frontiers of knowledge forward.

### The university with one of the highest number of **patents** in the country\*



Chitkara University has been consistently ranked among the Top 10 Universities of the country for filing maximum patents which speaks volumes of our research team, state-of-the-art infrastructure and intensive focus on working with new ideas and technologies.

**1500+**  
Patents

**40** Centres of Excellence

**40 Crore+**  
Research Grants

**4000+**  
Scopus indexed  
research papers

**10+**  
Joint research  
projects with  
**Global Universities**

One of the largest  
**University grants'**  
recipient for the  
**European Commission  
Erasmus+ Programme**

\* According to 2 years ranking by the Office of the Controller General of Patents, Designs, Trade Marks and Geographical Indications, India



## THE LARGEST CAMPUS BASED INCUBATOR IN NORTH INDIA

Chitkara Innovation Incubator Foundation (CIIF) is one of the largest Government supported incubators in North India with more than 200+ start-ups. It is designed to provide aspiring student entrepreneurs with the education, resources and funding to start and expand their own businesses. In line with the Government of India's initiative of Startup India (<https://www.startupindia.gov.in/>), CIIF empowers founders who are and will be solving some of the world's most pressing challenges through technology-based solutions.

### Key facts:

- Startups incubated since inception: 200+
- Total valuation of the incubated startups: USD 30 million
- Technologies commercialised: 59
- Jobs created by startups: 1000+
- External funding raised by the startups: USD 2.5 million
- Total no. of Patents filed by Incubates: 300+
- Current Incubates: 56
- Supported & approved by Department of Science & Technology, Govt. of India

### Received major grants like:

- Startup India Seed Fund, Niti Aayog, Govt. of India (<https://seedfund.startupindia.gov.in>)
- NIDHI PRAYAS, Department of Science & Technology, Govt. of India (<https://www.nidhi-prayas.org>)
- NIDHI-SSP, Department of Science & Technology, Govt. of India (<https://dst.gov.in/>)
- TIDE 2.0, Ministry of Electronics & Information Technology, Govt. of India (<https://meitystartuphub.in/incubators/schemes/tide-2-0>)

### SUPPORTED BY



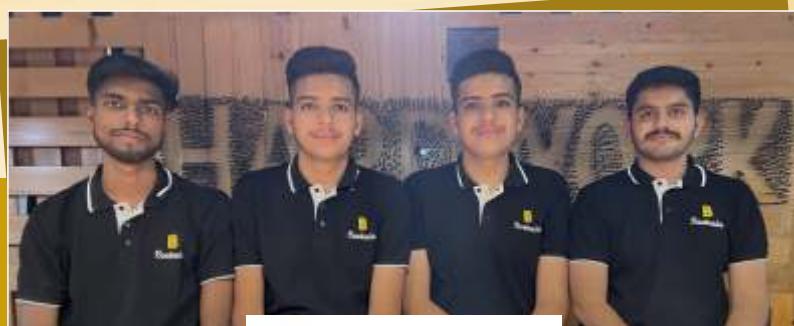
Department of Science and Technology  
Ministry of Science and Technology  
Government of India



Ministry of Electronics and  
Information Technology  
Government of India



## Chitkara University Incubated Startup



Raises \$180k at a valuation of \$1.8m in ideation round



## Pharmaceutical Programs

Pharmacy programs at Chitkara University in Punjab & Himachal Pradesh are approved by the Pharmacy Council of India. Our Pharmacy programs have become the centre of excellence for Pharmaceutical Sciences in North India and have been consistently ranked among the Top 50 Pharmacy Institutions of the country which speaks volumes about our multi-disciplinary curriculum, strong industry partnerships and research-focused faculty.



Ministry of Human Resource Development  
Government of India

Chitkara University's Pharmacy program has been ranked **20th** in the annual NIRF Ranking 2022 out of more than 1000 pharmaceutical colleges in the country.

## Our Academic Programs

### INDUSTRY ENDORSED PHARMA COURSES

#### **B. Pharm**

4-Year program with a difference

Undergraduate program with a strong pharmaceutical industry focus and intensive practical exposure for a period of 6 months and more.

#### **Pharm. D**

6-Year Pre-PhD program

A Pre-Doctoral program with a strong Pharmaceutical industry focus and intensive practical exposure.

#### **M. Pharm**

2-Year program with a difference

Postgraduate program with a strong pharmaceutical industry focus and intensive practical exposure for a period of 6 months and more with specialisations in Pharmaceutics | Pharmacology Drug Regulatory Affairs.

#### **M.Sc Chemistry**

2-Year Masters Program

Postgraduate program for sound preparation of the fundamentals in several areas of chemistry, recent advances in chemical theory and methods, and to get the students trained for the ever growing Clinical Research sector in India.

#### **B. Pharm Plus M. Pharm**

6-Year Dual Degree Program

An integrated program leading to B. Pharm & M. Pharm, with a diverse range of specialisations based on the needs of Pharma industry. Additional exposure to value added certification programs such as Regulatory Affairs / IP / Clinical Research.

#### **Pharm. D (Post-Baccalaureate)**

3-Year program

Students have an option to pursue lateral entry into Pharm. D program. B. Pharm candidates can pursue this program. The candidate will join the program in the 4th year of Pharm D and will subsequently complete the course.

#### **M.Sc in Pharmacovigilance & Clinical Research**

2-Year Masters Program

Aimed at creating skilled Pharmacovigilance professionals who can work with leading Pharma companies & Clinical Research Organizations (CROs) worldwide.

# Career Options

A career in Pharmacy unfolds a vista full of opportunities leading to a golden future for young aspirants in areas such as:

## ● Research & Development

M. Pharm and PhDs are particularly in great demand in the various areas of Pharmaceutical R&D.

Areas where professionals are required:

### - New Drug Discovery Research (NDDR)

Discovering a new drug has assumed prime importance in the post-GATT era where a pharmaceutical company has to ensure that it is selling original research products.

### - Process Development (P&D)

One of the important areas in bulk drugs industry is developing viable processes for the manufacture of drugs and intermediates for their commercial production.

### - Formulation & Development (F&D)

The success of any pharma company lies in the quality of its products, i.e., its formulations & dosage forms and constant research is required to develop new products that are more patient compliant. Formulation development ensures this.

### - Clinical Trials, Bioequivalence Studies, Toxicological Studies

These are some of the areas of clinical research which are in high demand as they are involved in the systematic evaluation of potential drug substances prior to getting them approved by the authorities.

## ● Production & Manufacturing

A Pharmacy professional can work as a production person, involved in the production of bulk drug and intermediates or formulations and dosage forms. Industries in the cosmetics, soaps, toiletries segment, dental products, blood and plasma products also hire pharmacy professionals.

## ● Analysis & Testing

Quality Control (QC) and Quality Assurance (QA) are the most integral areas of the drug and pharmaceutical industry. Highly specialised and trained staff is required to handle sensitive analytical procedures & sophisticated equipment.

## ● Marketing

The Pharma Sales & Marketing is a highly technical field & offers excellent opportunities for the pharmacy graduates. Pharmacy graduates are absorbed as product executives or managers and can progress through group product manager and brand manager positions and rise to national level manager status.

## ● Hospital Pharmacy

Another opening for a Pharmacy professional is "Registered Pharmacist" in the hospitals or drug stores. This is a very sought after profession especially in countries like the U.S.A., Canada, Middle East and European countries. This is a key position and the Pharmacist plays an important role from preparing prescription to the patient's medical history after the medical doctor has diagnosed the disease.

## ● Academics

Excellent opportunities for professionals are available in the teaching profession also. Besides teaching, academic related opportunities involve positions in Research Posts and Training Programs, Documentation, Library Information Services and Pharma Journalism.

## ● Entrepreneurship Opportunity

All Pharmacy graduates (B. Pharm, Pharm. D) are entitled by PCI Registration and FDA License to take up manufacturing, wholesale and retail business.

## Campus Recruitment

Following companies regularly hire our Pharmacy graduates for internship and full time positions:





## 4-Year Bachelor of Pharmacy (B.Pharm)

Approved by Pharmacy Council of India  
(Punjab & Himachal Pradesh)

Bachelor of Pharmacy (B.bPharm) 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 as well as visualise and work on laboratory techniques and improvements.

Furthermore, 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 preparing our students for 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.



## **Pharm. D**

### **6-Year Pre-Doctoral Program in Pharmacy Approved by Pharmacy Council of India**

A Postgraduate Pre-Doctoral program with a strong Pharmaceutical industry focus and intensive practical exposure.

The Pharm. D program at Chitkara University is an innovative combination of masters degree and doctoral courses that not only saves time but offers bright career prospects. It's a post-graduate professional pre-doctoral degree and the student gets authorisation to use prefix Doctor (Dr.).

This Postgraduate Pre-Doctoral (Pharm.D) program at Chitkara University will prepare students to provide high quality Pharmaceutical care that has the patient as its focus and optimal drug therapy and health as its goal.

The program imparts knowledge of the chemical, biological, social and clinical sciences that underline Pharmacy, an understanding of the relevance of that knowledge to patient care and the skills to apply that knowledge to specific care circumstances.

The program has been introduced to improve clinical and hospital Pharmacy services in India which is in direct contact with patient healthcare system and authorised to take critical decisions in in-patient prescription.

The Pharm. D degree requires five years of classroom and hospital-based didactic study. It is followed by one year of internship training in a hospital setting for Clinical Management of in-Patients, in addition to ongoing practicals and research project. Pharm. D students and graduates actively participate in direct patient care in hospitals.

#### **Program Objective**

The Pharm. D. curriculum is designed to produce a scientifically and technically competent Pharmacist who can apply this education in such a manner as to provide maximum Healthcare services to patients.

Students are provided with the opportunity to gain experience in patient's close cooperative relationships with health practitioners. It is the goal of Pharmacy Schools to prepare Pharmacists who can assume expanded responsibilities in the care of patients and assure the provision of rational drug therapy.

## Program Structure

Some of the important subjects taught in the various semesters of the 6-Year program are:

- Human Anatomy & Physiology
- Pharmaceutics
- Pharmaceutical Inorganic Chemistry
- Pathophysiology
- Community Pharmacy
- Pharmacognosy & Phytopharmaceuticals
- Pharmacology
- Pharmaceutical Analysis
- Pharmaceutical Formulations
- Hospital Pharmacy
- Biostatistics & Research Methodology
- Biopharmaceutics
- Pharmacoepidemiology
- Pharmacoeconomics
- Clinical Pharmacokinetics
- Pharmacotherapeutic Drug Monitoring

## Career Opportunities

Pharm. D qualification, as prevalent in U.S. UK, Canada, other European and developed countries, entitles the Pharmacists to prescribe medicines, while the doctor's role is focused mainly on diagnosis. Also, with a Pharm. D, an individual can register as Pharmacist anywhere in the world and practice at a Hospital, Clinic or Community Healthcare Centre. A Pharmacist can also practice as a Clinical Scientific Expert and Clinical Research Associate.

- Hospital Pharmacist
- Clinical Pharmacist
- Community Pharmacist
- Specialised Area Opportunities
- Pharmacy Education
- Pharmacoeconomics
- Managed Care
- Home Health Care
- Governmental Agencies
- Community Pharmacy
- Clinic Pharmacy Practice
- Knowledge Processing Outsourcing (KPO)

All the jobs related to Hospital/Clinical Pharmacy etc. in European/American and other countries are highly paid due to the authority given to the Pharmacist to give prescription and clinical monitoring to admitted patients, while the physicians focus on diagnosis & operative care.

## Pharm. D (Post Baccalaureate)

Students have an option to pursue lateral entry into Pharm. D program.

B. Pharm candidates can pursue Pharm. D (Post Baccalaureate) program.

The candidate will join the program in the 4th year of Pharm. D and subsequently complete 4th, 5th and 6th year.



## 2-Year Master of Pharmacy (M.Pharm)

We are offering the following 2-Year Master Degree Program for the current academic year:

- M. Pharm - Pharmaceutics
- M. Pharm - Pharmacology
- M. Pharm - Drug Regulatory Affairs
- M. Pharm - Pharmacy Practice (Clinical Research & Clinical Pharmacology)



## M. Pharm in Pharmaceutics

The M. Pharm (Pharmaceutics) program leads to specialisation in formulation development, manufacturing technology, and process development areas, which are essential specialisations for Manufacturing of Traditional and Novel Drug Delivery Systems.

The first year involves theoretical and practical sessions in the following areas: Dosage Form Design; Advanced Pharmaceutical Methods of Analysis; Drug Regulatory Affairs; Biopharmaceutics and Pharmacokinetics; Dosage Form Technology; Advances in Industrial Pharmacy; and Novel Drug Delivery Systems.

The Second-year Projects Touch Upon Formulation Development, Stability Studies and Process Validation for Traditional and Novel Drug Delivery Systems.

Some of the areas that have been taken-up by various batches since 2009 include Hydrogels, Microemulsions, Microspheres, Nanospheres, Nanosuspensions, Gastroretentive systems, solid-solid and solid-liquid dispersed systems, and development of modified excipients.

Continuous interaction with industries including Nectar Life Sciences, Abbott Healthcare, Unichem, Clinsys, Arbro Pharma, Dr. Reddy's Labs and other organisations for Academic, conferences and placements are special features of the course.



## M. Pharm in Pharmacology

This program leads to specialisation in Pharmacology, which is an integral part of the drug discovery and drug design processes. These processes deal with the identification of lead molecules that could have potential therapeutic activity due to specific molecular and receptor affinity, and analogous structure to specific sites and proteins in the body.

In the first year, the Program covers theoretical & practical sessions in subjects including Molecular Pharmacology; General Pathophysiology; Pharmacology and Pharmacotherapeutics I and II; Clinical Research methodologies; advanced Pharmaceutical Methods of Analysis; Drug Regulatory Affairs; Quality Assurance and Biostatistics; and other subjects.

In the second year of the program, students take-up projects that are aimed at developing and exploring novel receptor targets and mechanisms for drug action in the pathophysiological stages of the disease.

## M. Pharm in Drug Regulatory Affairs

The Master's program in Drug Regulatory Affairs is a comprehensive specialisation in pharmaceutical regulations, which are in practice in different countries to ensure validated procedures for Pharma Research, Technology Transfer for large scale continuous Manufacturing Operations, Quality Assurance, Distribution Records, Recall and Pharmacovigilance. A pharmaceutical product has to be approved for safety, efficacy and procedural compliance as well as documentation for marketing in U.S. by USFDA, in UK by MHRA, in Europe by EMEA, in Japan by PMDA, in India by CDSCO and similarly for other countries. The course gives details of the structures of these organisational procedures & guidelines to submit documents & dossiers and follow up with these regulatory agencies in the form of DMF & CMC documents, CTD & CTD documents. The professionals with M. Pharm Drug Regulatory Affairs specialisation are highly paid.



## **M. Pharm in Pharmacy Practice (Clinical Research & Clinical Pharmacology)**

This program offers a specialisation in the Clinical Drug Development methodologies, its regulations, and control. Once the safety and efficacy of a novel chemical entity is established for a drug compound in preclinical animal studies, it is put through the process of clinical development. This is where the drug is studied for safety, efficacy and dosing in increasing numbers of human population setting through Phase I–IV clinical trials.

The branch offers exposure to subjects on principles of Pharmacology & Therapeutics; Clinical Research Methodologies; Clinical Drug Development; Advanced Pharmaceutical Methods of Analysis; Drug Regulatory Affairs; Recent Advances in Pharmacology; Quality Assurance & Biostatistics and other subjects. The second-year clinical projects are done in hospital inpatient /outpatient settings, either in association with a clinical research organisation or a pharmaceutical company.

## **Career Opportunities**

This master's degree program provides advanced study in the areas of pharmacy practice, clinical pharmacy, pharmaceutics, medicinal chemistry, pharmacotherapy, and health systems, and includes practical training in community and hospital pharmacy. The pharmaceutical industry, as the fastest-growing research discipline, is in desperate need of expertise. You will have a plethora of rewarding job opportunities to choose from.

The following are some of the possible paths into the pharmaceutical industry:

- Medical Representative
- Intellectual Property (IP)
- Pharmacist
- Medical Writer
- Quality Control
- Pharmacognosy
- Regulatory Affairs
- Clinical Research
- Pharmacology
- Research Scientist
- Teaching



## **2-Year M.Sc in Pharmacovigilance & Clinical Research**

in collaboration with

# **parexel<sup>®</sup>**

### **Introduction to Pharmacovigilance**

One sector that continues to boom and is recession proof is Healthcare and Pharmaceuticals. With many drugs hitting the market, there is a growing need for vigilance to prevent and monitor the adverse effect of drugs. There is a complete science to it. It is called Pharmacovigilance.

Pharmacovigilance also known as Drug Safety is the Pharmacological Science relating to the collection, detection, assessment, monitoring and prevention of adverse effects with pharmaceutical products. As such, Pharmacovigilance focuses on adverse drug reactions, or ADRs, which are defined as any response to a drug which is noxious and unintended, including lack of efficacy. Medication errors such as overdose, misuse and abuse of a drug, as well as drug exposure during pregnancy and breastfeeding, are also of interest, even without an adverse event, because they may result in an adverse drug reaction. Simply put, Pharmacovigilance, is drug safety. It can be defined as the study and prevention of adverse effects caused by pharmaceutical products.

Pharmacovigilance is the reason because of which many drugs are withdrawn from or are not even brought into the market at times. The government supports and helps to implement courses in Pharmacovigilance as their primary goal is to ensure students of medicine are aware of the adverse effects of certain drugs.



## About Parexel International

Parexel is among the world's largest clinical research organizations (CROs), providing the full range of Phase I to IV clinical development services to help life-saving treatments reach patients faster. Their depth of industry knowledge and strong track record gained over the past 40 years is moving the industry forward and advancing clinical research in healthcare's most complex areas, while their innovation ecosystem offers the best solutions to make every phase of the clinical trial process more efficient.

Parexel is focused on supporting the development of innovative new therapies to improve patient health and they do this through a suite of services that help life sciences and biopharmaceutical customers across the globe. They have a solid reputation across the globe for transforming scientific discoveries into new treatments for patients. From clinical trial and regulatory and consulting services to commercial and market access - their therapeutic, technical and functional ability is underpinned by deep conviction in what they do.

## Program Overview

The 2-year Masters program in Pharmacovigilance is aimed at creating skilled and competent Pharmacovigilance professionals who can work effectively at different levels in Pharmacovigilance departments of leading Pharma Companies and Clinical Research Organisations (CROs) worldwide. This program lets the students learn from industry experts to get Internationally Compliance Pharmacovigilance training based on defined Pharmacovigilance Competency Frameworks (PCF).

The curriculum includes in-depth study of Pharmacovigilance related processes, complemented with hands-on training on ICSR processing, quality management, aggregate report (PSUR/ PBRER/ PADER etc.) writing and compliance management and in turn helps students develop internationally accepted competencies to become world-class Pharmacovigilance Professionals.

This strategically designed M.Sc program is the first of its kind in the country, as it is conducted by the University and managed by industry.

Based on International Regulatory & Industry Standards, this program is blended with real-world inputs from Parexel in the form of practical modules and the use of online software for clinical data management. Meanwhile, the 6 month internship with Parexel assures optimal experiential training.

## Program Highlights

Some salient features of this program are:

- India's first program conducted by University and managed by industry leader
- Degree program meets international standards of WHO, JCH, FDA and EMEA
- A program accepted globally based on the skill standards
- Regular interaction with industries including leading Pharmaceutical companies and CROs
- 6 months' internship with Parexel International in last semester to get hands-on learning



## Careers in Pharmacovigilance

The field offers a great career scope for Life Science and Pharmacy graduates. It is a scientific discipline that is primarily concerned with reporting and analysing of drug side effects. It is primarily due to the work of these professionals that the drugs in the market that we consume are mostly safe, and those that are found harmful are taken off the market.

After a drug side effect is reported, these professionals enter the event in relevant databases, follow up with the case to gather more information and forward these reports to regulatory authorities and other applicable bodies. Pharmacovigilance professionals identify signals in data that may point towards a potential side effect and probe the case further.

The global Pharmacovigilance market size is projected to reach USD 7778 Million by 2027, from USD 4385.7 Million in 2020, at a CAGR of 8.1% during 2021-2027.

- Pharmacovigilance Scientist
- Pharmacovigilance Quality Reviewers
- Pharmacovigilance Quality Analysts
- Pharmacovigilance Medical Safety Writers
- Pharmacovigilance System Specialists, etc.

Pharmacovigilance profiles normally include tasks such as:

- Recording and reporting adverse reactions received from healthcare professionals and consumers.
- Conducting in-depth interviews with patients and healthcare professionals.
- Developing a thorough knowledge of products.
- Completing periodic safety update reports on drugs and other treatments.
- Writing and reviewing serious adverse effects report and forms.
- Flagging early warning signs of adverse effects of drugs.
- Minimising the risk of serious side effects.
- Completing safety audits.



## 2-YEAR **M.Sc CHEMISTRY**

2-Year M.Sc program in Chemistry offers students the opportunity to acquire a sound preparation of the fundamentals in several areas of chemistry, to introduce students to recent advances in chemical theory and methods, and to get them trained for the ever growing Clinical Research sector in India.

This program is aimed at creating skilled and competent professionals who can work effectively in Pharmaceutical and Chemistry departments of leading Pharma companies, Government sector and Clinical Research Organisations worldwide. The curriculum for this industry endorsed program will let students gain in-depth knowledge of Chemistry based pharmaceutical training and skills necessary to train the students on par with the routine of Industrial activities in R&D and F&D, organic synthesis, various advanced analytical instrumental techniques for the characterization and their applications in drug discovery, recent advances in the field of medicinal chemistry at the molecular level including different techniques for the rational drug design.

### Academic Partnership with



A leading PreClinical Contract Research Organisation

Jubilant Biosys Ltd is a part of the Jubilant Pharmova family of companies with research centres in India and across Asia & North America. With our global reach, Jubilant Biosys provides comprehensive drug discovery services and contract research services in partnership with leading worldwide healthcare companies. With a clear scientific focus in oncology, metabolic disorders, central nervous system diseases, pain and inflammation, Jubilant Biosys has rapidly emerged as a leading collaborator for pharmaceutical and biotechnology companies worldwide.

Chitkara University has collaborated with Jubilant Biosys for curriculum support and assured Placement opportunities for students from M.Sc in Chemistry program.



CHITKARA  
UNIVERSITY



## Healthcare Industry in India

There is no better time to enter into the field of Healthcare Management. Healthcare Industry is growing globally. Consequent to this growth, there is an explosion of opportunities for ALLIED HEALTHCARE professionals. Healthcare has become one of India's largest sectors - both in terms of revenue earnings and employment. Public as well as private players have sensed the immediate demand and have started to strengthen their coverage & services in the Healthcare domain.

India is a vast country with a huge population of 130 Crore. Despite noteworthy improvements, it is still burdened with age old problems of mother and infant mortality, malnutrition and infectious diseases. Simultaneously, rising incidences of lifestyle diseases like Hypertension, Diabetes, Depression and Psychosis have also made inroads both in urban and rural areas. Added to this dual burden, are epidemics of new diseases (COVID, Swine Flu, Bird Flu) and re-emerging diseases (Dengue, Chikungunya) which are posing a huge challenge to the Indian Healthcare space.

India is largely an underserved market with respect to Healthcare facilities. There is a huge scope for improvement and the clamour for affordable and accessible Healthcare has become prominent. Besides, the conventional mode of Healthcare delivery,

there is also a growth in demand for sectors like Allied Health Sciences, Public Health, Home Healthcare and Telemedicine. To facilitate the whole gamut of Healthcare, there is an emergence of Data Informatics and Analytics, which will bring in a paradigm shift in the way Healthcare is delivered and monitored.

Employment opportunities in Healthcare are growing with each passing year. This has enormously tipped the need for competent & well-groomed professionals. Private as well as public sector jobs are available. The latest window of opportunity has been opened by the Government of India's ambitious, promising and far-reaching National Health Protection Scheme called Ayushman Bharat and the National Commission for Allied and Healthcare Professions Act 2021.

## Industry Overview

- India's Healthcare industry is projected to grow to 17% by each year.
- Healthcare industry in India is projected to reach Rs. 50 lakh crore by 2025.
- The Govt. of India is planning to increase Public Health spending to 2.5% of the country's GDP by 2025.
- 100,000 jobs are expected to be created from Ayushman Bharat.
- India is experiencing 22-25% growth in medical tourism and the industry will reach US\$ 9 billion.
- According to a report of NITI Aayog, the Indian government will increase public expenditure on Healthcare from 1.1% to 2.5% GDP in the next four years and to 5% in the following 5 years.
- The Govt. of India aims to increase healthcare spending to 5% percent of the GDP by 2025.

# Advantage India

<b>Strong Demand</b>	Healthcare market in India is expected to reach US\$ 426 billion by 2025. It is estimated that India will require 2.07 million more health care staff* by 2030 in order to achieve a doctor-to-population ratio of 1:1,000.
<b>Attractive Opportunities</b>	Rising incomes, greater health awareness, lifestyle diseases and increasing access to insurance will contribute to growth.
<b>Rising Manpower</b>	About 250,000 more health workers are needed to meet the standards set by the World Health Organization – which is 22.8 health workers per 10,000 population.
<b>Policy Support</b>	The world's largest Government Funded Healthcare Scheme, Ayushman Bharat, was launched on September 23, 2018.

Note: \* Number of doctors possessing recognised medical qualifications (under I.M.C Act) registered with State Medical Councils | Medical Council of India  
<https://scroll.in/article/931857/with-20-medical-professionals-for-every-10000-citizens-can-india-provide-universal-healthcare>



## INDUSTRY COLLABORATION WITH FORTIS HEALTHCARE

Fortis Healthcare Limited is a leading integrated Healthcare Delivery Service Provider in India. The Healthcare verticals of the company primarily comprise hospitals, diagnostics and day-care specialty facilities. Currently, the company operates its healthcare delivery services in India, Dubai and Sri Lanka, with 36 healthcare facilities (including projects under development), approximately 4,000 beds and over 415 diagnostic centres.



Fortis Hospital, Mohali



Escorts Heart Institute &  
Research Centre Ltd, Okhla



Fortis Hospital, Noida



Fortis Ft. Lt. Rajan Dhall  
Hospital, Vasant Kunj



Fortis La Femme, New Delhi



Fortis Escorts Hospital,  
Faridabad



Fortis Escorts Hospital, Jaipur



Fortis Malar Hospital, Chennai



Hiranandani Fortis Hospital,  
Vashi, Mumbai



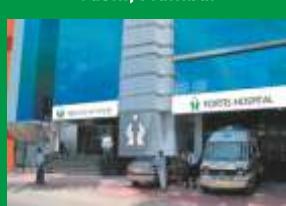
Escorts Heart Centre, Raipur



Fortis Escorts Hospital,  
Amritsar



Fortis Jessa Ram Hospital,  
New Delhi



Fortis Hospital  
Seshadripuram, Bengaluru



Fortis Clinique Darne,  
Mauritius



Fortis Modi Hospital, Kota



S.L.Raheja Hospital, Mumbai



Fortis Hospital,  
Shalimar Bagh,  
New Delhi



Fortis Memorial and  
Research Institute, Gurgaon



Fortis Kangra, HP



Fortis Hospital  
Bannerghatta Road  
Bengaluru

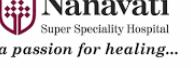


# SCHOOL OF HEALTH SCIENCES



# Campus Recruitment for Healthcare Graduates

Our Healthcare Programs have always enjoyed special preference among Healthcare recruiters on account their exceptional quality since inception. Graduates are offered placement in sectors like Consultancy, Diagnostics, Hospital, Insurance, IT, Medical Equipment, Pharmaceuticals, NGOs & Public Health and Clinical Research Labs.

# Allied Healthcare 4-Year Bachelors in Medical Laboratory Science (MLS)

A Medical Laboratory Scientist is a healthcare professional who performs Chemical, Hematological, Immunologic, Microscopic and Bacteriological Diagnostic Analysis on body fluids. The scientist also performs equipment validations, calibrations, quality controls or run-by-run assessment, statistical control of observed data and records normal operations.

A career in Medical Laboratory Science combines the challenges of Medicine, Pathology, Basic Sciences and Clinical Laboratory Sciences using state-of-the-art biomedical instruments, critical thinking skills and molecular techniques.

## Program Overview

Medical Laboratory Scientists are at the heart of a patient-centric health care team, managing labs and running tests that will inform diagnosis and treatment.

Our program in Medical Laboratory Science lays special emphasis on:

Medical Microbiology | Clinical Biochemistry | Human Anatomy | Human Physiology | Microbiology Pathology Fundamentals of Hematology | Scientific Writer Cytogenetic & Tissue Culture | Blood Banking Cytology & Cytotechniques | National Health Program Sales & Marketing Executive | Quality Control Manager

In clinical rotations, the student experiences hands-on learning in each discipline of the laboratory and under supervision, performs diagnostic testing in a functioning laboratory.

## Industry Internship

After having successfully completed their academics in the University, the students need to undergo a 6 months internship at reputed hospitals.

## Employability

The Medical Laboratory Scientist is qualified by academic and applied science education to provide service, research in clinical laboratory science, related areas of the rapidly changing and dynamic healthcare delivery of systems.

- After successful completion of the program a student will be capable of holding assignments in hospital and health-care institutions, research laboratories and diagnostic centres.
- Successful candidate can set-up their own establishments.
- Students with an instinct to learn can do higher studies in specialised field of study, and progress as scientists and even enjoy faculty positions in academic institutions.
- Students can get placed as Scientific Officer or Quality Assurance Officer.



## Allied Healthcare **2-Year M.Sc in Medical Laboratory Science (MLS)**

Master in Medical Laboratory Sciences is a post graduate 2-year academic program, with 6 months of mandatory internship and project work.

The aim of this program is to provide skilled and professional training in the diagnostic field of Medical Laboratory Science. The different specialisation of this program trains students in specialised technology which makes them efficient to do work in specialised diagnostics and research area.

Students are also trained to handle advanced lab equipment and perform accurate diagnostics procedure and their reporting, with great emphasis on Quality Control & Quality Assurance. Students can make their careers in Diagnostics, Academics, Laboratory Medicine, R & D Sectors, Quality Control & Quality Assurance and as Entrepreneurs, by setting up their own laboratory.

Some of the program objectives are:

- Proficiently supervise and perform the full range of Clinical Biochemistry and Medical Microbiology Laboratory tests.
- Develop and evaluate test systems and interpretive algorithms.
- Manage information to enable effective, timely, accurate and cost-effective reporting of laboratory-generated information.
- To teach undergraduate students and develop/guide research projects.
- Faculty development in Medical Laboratory Science (MLS).



# Allied Healthcare

## **4-Year B.Sc in Medical Radiology & Imaging Technology (MRIT)**

Medical Imaging is the technique and process used to create images of the human body for clinical purposes that is, medical procedures seeking to reveal, diagnose or examine disease or medical science, including, the study of normal anatomy and physiology. Medical Imaging Technologist/Radiographers performs imaging of the human body for diagnosis or treating medical problems.

### **Program Overview**

Our B.Sc program in Medical Imaging Technology lays special emphasis on:

- Human Anatomy/Surface Anatomy
- Human Physiology
- Radiation Physics
- Radio Diagnosis and Positioning
- Advances in Radio-imaging
- Specialised Diagnostic Techniques
- Radiological Technology
- Radiation Protection

### **Industry Internship**

Our students complete their internship at Fortis Hospital. The completion of internship is mandatory to enable a student to obtain the Bachelors of Medical Radiology & Imaging Technology (MRIT).

### **Employability**

- After successful completion of the program, a student will be capable of holding assignments in hospital and healthcare institutions, research laboratories and diagnostic centres.
- Students with an instinct to explore deeper can enroll for higher studies in a specialised field of their interest, and progress as Scientists and even enjoy Faculty positions in academic institutions.

## **2-Year M.Sc in Medical Radiology & Imaging Technology (MRIT)**

The quality of medical care has improved tremendously in the last few decades due to the advances in technology, thus creating fresh challenges in the field of healthcare. It is now widely recognised that health service delivery is a team effort involving both clinicians and non-clinicians and is not the sole duty of physicians and nurses. Professionals that can competently handle sophisticated machinery and advanced protocols are now in high demand. In fact, diagnosis is now so dependent on technology, that allied and healthcare professionals (AHPs) are vital to successful treatment delivery.

### **Objective of Program**

The M.Sc in Medical Radiology & Imaging Technology is specifically aimed at those pursuing a professional career in Imaging Science Technology. It is designed to provide specialised training in the scientific principles of modern imaging science and in the application of these principles in the field of radio diagnosis. It is designed as a higher degree course suitable for graduates having experience in the technology of imaging science.



## Allied Healthcare

### 4-Year B.Sc in Operation Theatre Technology

The 4-Year Bachelor of Science (B.Sc) program in Operation Theatre Technology has been designed for meeting the demand of the growing need of experts in the fields of Operation Theatre Management, Medical Ethics, Anaesthesia Technology and Post Operation Care.

Operation Theatre and Anaesthesia Technologist are responsible for direct and indirect patient care, equipment set up and operation procedures. They are trained to assist the surgeons during the procedures and assume responsibility for completion of other functions as assigned.

#### Industry Internship

Our students complete their internship at Fortis Hospital. The completion of internship is mandatory for the student to obtain the B.Sc Operation Theatre Technology Degree.

### 2-Year M.Sc in Operation Theatre Technology

This 2-Year program is designed to provide in depth knowledge and impart skills to assist in preparation of operation theatre before and during an elective or emergency surgery with 6 months -1 Year internship in Fortis Hospital Network with responsibilities in managing the patients. The post graduate student must take part in seminars, short topic discussions, case discussions, journal club presentations and clinical postings and the academic training will include lab work, experimental work and dissertation.

#### Program Overview

Our B.Sc program in Operation Theatre Technology lays special emphasis on:

Applied Anatomy & Physiology | Clinical Pharmacology  
Clinical Microbiology | Medical Ethics  
Anesthetic Techniques | CSSD Procedures

#### Employability

Operation Theatre Technologists are required across all hospitals for conduct of surgeries which include:

General Surgery | Ophthalmic Surgery | Orthopaedic  
Gynecology Surgery | Plastic Surgery | ENT Surgery  
Neurosurgery | Cardio Therapy Surgery | Spinal Surgery



## Allied Healthcare **4-Year B.Sc in** **Dialysis Therapy Technology**

Dialysis is a procedure to keep the body running as normal as possible while the kidneys are under repair or while a person waits for a kidney transplant. Without working kidneys or Dialysis, salts and other waste products would accumulate in the blood and poison the person. Typical Haemodialysis treatments (using an artificial kidney) last about four hours and are needed about three times a week.

Dialysis Therapists work with people whose kidneys no longer work properly or at all. Also sometimes referred to as Hemodialysis Technologists or Patient Care Technologists (PCTs); they operate machines that remove wastes, salt and extra water from patients' blood while keeping safe levels of certain chemicals. The therapists prepare patients for Dialysis, monitor them and the machine during Dialysis and perform required procedures when Dialysis is completed.

### **Scope**

Dialysis Assistants work with the Dialysis Therapist to plan the implementation of Dialysis prescription, perform Hemodialysis, manage various intra-dialytic complications and document patient data. The Dialysis Therapist works with the Head of Department/Senior Dialysis Therapist to supervise the Hemodialysis Assistants and auxiliary personnel, manage intra-dialytic complications, documents and patient records.

### **Program overview**

Our B. Sc Program in Dialysis Therapy technology lays special emphasis on:

Applied Anatomy and Physiology related to DTT  
Applied DTT theory and lab | Nutritional aspects related to Dialysis Pathology related to DTT.

### **Employability**

- Graduates will be employed in hospitals and private practices as Haemodialysis (HD) Technologist/Therapist, Plasmapheresis/ Apheresis Technologist/Therapist, Peritoneal Dialysis (PD) Coordinator, Patient Care Technician in Dialysis, CRRT Technologist/Therapist, Hemoperfusion Technologist, Application Specialist in the field of Dialysis, Quality Manager in HD Unit, Consultants in Developing New Units, Manager Level posts in PD, Clinical instructors/Dialysis Lab Assistant or can establish their own units/wheels.
- Graduates can expect to be employed in hospitals and private practices as Dialysis Therapists.
- Graduates have good employment prospects and will enter a field in which the demand for professionals has increased in recent years.

OOD  
ID

Food &  
drinks high  
in fats & sugar  
only small amounts

Meat, fish, eggs,  
nuts & pulses  
2 to 3 servings per day

Milk, cheese  
and yogurt  
3 to 4 servings



# Allied Healthcare

## 4-Year B.Sc (Hons.) in Nutrition & Dietetics

This unique program is designed to equip the students with scientific information on nutritional and metabolic care and the relationship between nutrition in health and disease. It will help the graduates with the tools and skills required to promote the nutrition and well-being of individuals and groups in a variety of settings.

It involves the study of basic and advanced level of holistic nutrition, maintaining and improving health by enhancing the quality of life and overall well-being by advocating a healthy diet and exploring healthier dietary modifications.

This program in Nutrition and Dietetics focuses on the role of food, nutrition and health in society. Integrating knowledge and research into course work, our curriculum will provide you with an understanding of basic sciences and theoretical and applied aspects of Nutrition and Dietetics.

### Program overview

Our B. Sc (Hons.) Program in Nutrition and Dietetics lays special emphasis on:

General Physiology | Principles of Food and Nutrition  
Introduction to Food Science | Food Chemistry  
Food Microbiology | Basics of Cooking and Meal Planning | Nutritional Biochemistry | Nutraceuticals, Functional Foods and Nutrigenomics

### Career Prospects

The study of nutrition and food provides a solid academic education and practical training for a variety of career opportunities. These fields also encompass some of the most critically important and hotly debated issues affecting modern society, such as, world hunger and problems related to safety, bioengineering and the globalisation of food.

Through positions in health care, business, government service, private practice, the food & food service industries and educational and community programs, nutrition and food professionals help individuals and the public make better-informed choices about food and nutritional health.

Registered Dietitians are certified professionals who work in Government Hospitals and prescribe certified diet system for disease management and also guide for proper meal management to prevent the occurrence of metabolic disorders.

- Clinical Dietitians are specialists in food nutrition services in hospitals, outpatient clinics and private practices. They assess patient nutrition, develop dietary plans, provide patient counselling and monitor patient's progress.
- Community Dietitians work in public health agencies, health and fitness clubs and day care centres. They counsel people on food choices and direct programs in nutrition awareness and disease prevention.
- Consultant Dietitians are independent business people who work as nursing home consultants, book authors and patient counsellors in medical centres and fitness programs. They also develop and evaluate food service systems and serve as independent advisors to the industry.



## 4-Year B.Sc in Nursing (Basic)

This program is offered at Chitkara University, Punjab and Chitkara University, Himachal Pradesh

The B.Sc. Nursing degree program is a four-year fulltime program comprising eight semesters, which prepares B.Sc. Nursing graduates qualified to practice nursing and midwifery in a variety of healthcare settings.

The program prepares nurses and midwives for generalist nursing including midwifery practice. Knowledge acquisition related to wellness, health promotion, illness, disease management and care of the dying is core to nursing practice. Mastery of competencies is the main focus. Students are provided with opportunities to learn a whole range of skills in addition to acquiring knowledge related to nursing practice (nursing and midwifery).

Nursing programs at Chitkara University are an excellent opening for candidates who aspire to be trained in India as per international standards.

### Program Objectives

- Produce knowledgeable competent nurses and midwives with clear critical thinking skills who are caring, motivated, assertive and well-disciplined responding to the changing needs of profession, healthcare delivery system and society.
- Prepare them to assume responsibilities as professional, competent nurses and midwives in providing promotive, preventive, curative and rehabilitative healthcare services in any healthcare setting.
- Prepare nurses and midwives who can make independent decisions in nursing situations within the scope of practice, protect the rights of individuals and groups and conduct research in the areas of nursing practice and apply evidence-based practice.
- Prepare them to assume role of practitioner, teacher, supervisor and manager in all healthcare settings.



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, sugar 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 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 computer literacy among 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.

## **2-Year Post Basic B.Sc in Nursing**

in collaboration with Fortis Healthcare

The 2-Year Post Basic B.Sc Nursing offered by Chitkara University is recognised by the Indian Nursing Council (INC) and the Punjab Nursing Registration Council (PNRC).

### **Program Objectives**

Our 2-Year Post Basic B.Sc Nursing at Chitkara School of Health Sciences is a Bridge Course offered to general Nursing Diploma holders to equate them with the graduate nurses. The graduates will be prepared to assume responsibility in the primary, secondary and tertiary care of people as professional nurses.

The program will help students develop an understanding of the philosophy, objectives and responsibilities of Nursing as a profession. The purpose of the course is to orient the students to the current concepts involved in the practice of nursing and developments in the Nursing profession integrating the knowledge of various fields, and provide holistic care to patients and their families through the promotion of healthcare, prevention of disease spread & infection, care during illness and rehabilitation during recovery.

### **Post Basic B.Sc Nursing Objectives**

The aim of the program at the Post Basic level is to upgrade the Diploma (GNM) Nurses to:

- Assume responsibilities as professional, competent nurses and midwives at basic level in providing promotive, preventive, curative and rehabilitative services.
- Make independent decisions in nursing situations, protect the rights of and facilitate individuals and groups in pursuit of health and to function in the hospital.

- Work in community nursing services, and conduct research studies in the areas of nursing practice. They are also expected to assume the role of teacher, supervisor or manager in a clinical/public health setting.

### **Some of the important modules taught under this program are:**

- Microbiology
- Mental Health Nursing
- Biochemistry & Biophysics
- Community Health Nursing
- Nutrition & Dietetics
- Sociology
- Psychology
- Nursing Foundation
- Medical & Surgical Nursing
- Child Health Nursing
- Maternal Nursing
- Review of Anatomy & Physiology

### **Industry Internship**

Our collaboration with Fortis Hospital, plays a key role in providing the necessary "hands-on" clinical and paraclinical training & experience necessary for the students pursuing this hospital-based academic program. The overall aim of Nursing program is to prepare a graduate Nurse to work as a frontline worker in the clinical & community field and the educational arena.



## 2-Year M.Sc in Nursing

Medical Surgical Nursing | Psychiatric Nursing

Community Health Nursing Paediatric Nursing | Obstetrics & Gynaecological Nursing

The 2-Year M.Sc Nursing offered by Chitkara University is recognised by the Indian Nursing Council (INC) and the Punjab Nursing Registration Council (PNRC).

The program will prepare nurses who can make independent decisions in nursing situations, protect the rights of or facilitate individuals and groups in pursuit of health, function in the hospital, community nursing services and conduct research studies in the areas of nursing practice. They are also expected to assume the role of teacher, supervisor and manager in a clinical / public health setting.

The clinical exposure in the respective speciality, classes taken by clinicians and the nursing faculty, participation in various conferences, organising workshops on their own and the dissertation itself make each student's pathway to achieve the aims of the course.

On completion of this program, graduates will be able to apply knowledge from physical, biological and behavioural sciences, medicine, including alternative systems and nursing, to providing nursing care to individuals, families and communities. This program will also give our students the ability to plan and effect change in nursing practice and in the health care delivery system.

Some of the career options after this program are:

Cardiac Nurse | Community Health Nurse

Nursing Advisor | Child Health Nurse | Critical Care Nurse

Nurse Administrator | Nurse Educator Nursing Faculty



## Optometry Program

### Program Overview

"Eyes are the windows to an individual's soul." This poetic notion being acknowledged, eyes offer us a viewpoint of reading, writing, and carrying out everyday tasks. As the caretakers of these eyes, optometrists are eye care specialists that are regarded as one of the most significant and highly looked upon professionals in the field of healthcare.

India has a huge vision deficit with over 300 million people deprived of vision correction and hence solving this gap requires more than 100,000 high-quality optometrists.

Optometry is a field of healthcare that is focused on dealing with the matters related to the eye. Optometry involves providing a one-stop-shop for eye and vision care. An optometrist provides primary eye and vision care, performs eye examinations to detect vision problems and prescribes corrective lenses to correct those problems. Optometry is a discipline that caters to offering the gift of an unobstructed and clear vision. Since the public demand for well-qualified optometrists is rising, high-quality undergraduate programs are required to educate and train the students who aspire to pursue a successful career in the field.

## **4-Year Bachelor of Optometry (B. OPTOM)**

4-Year full time Bachelor of Optometry program at Chitkara University focusses on providing integrated approach which help develop a high degree of conceptual skills, analytical skills and quality technical knowledge base among future Optometrists and prepares them for a bright future in the Healthcare industry. Optometry is a healthcare profession and a vision care science which deals with the examination, diagnosis, treatment and management of diseases & disorders of the visual system.

This undergraduate degree will train the students with the requisite skills and knowledge that is needed to work as an optometrist. The students who pursue this course will be trained to understand the science behind diseases of the eye, its diagnosis, treatment, rehabilitation and referral as appropriate. Gaining in-depth knowledge will help the students to become professionals who can reduce vision-related issues. Devising ways to offer a functional and effective healthcare delivery system, the field of Optometry is one of the most important and fastest-growing fields.

Students will be groomed and trained by optometry experts, specialised in binocular vision and vision therapy, low vision and rehabilitation and contact lenses to meet the demands of a rigorous curriculum. They will be trained to offer comprehensive care for visual systems like vision, detection of all kinds of eye diseases, carefully prescribing eye correction options like suitable eyeglasses, contact lenses and low vision aids.

This is a dynamic and challenging career, which allows one to help people achieve personal growth, community respect, job flexibility and financial success. The training will enable a student to become a competent person in providing service to the community in urban, semi-urban and rural settings in private and government healthcare organisations.

### **Some basic courses covered during the 4 year of the program are:**

- Basic Biochemistry & Nutrition | General & Ocular Physiology & Anatomy | Physical & Geometric Optics
- Principles of Lighting | Optometric & Visual Optics Optometric Instruments | CEVS & Ocular Diseases
- Microbiology, Pathology & Pharmacology Clinics Medical Psychology | Systemic diseases & Glaucoma Low Vision Aids & Geriatric Optometry Contact Lens Dispensing Optometry & Occupational Optometry
- Pediatric Optometry, Binocular Vision & Advances in Optometry Project | Clinics & Specialities
- Law & Optometry | Public Health Epidemiology & Biostatistics

### **Program Structure**

Keeping the above in mind, Chitkara University has planned a dynamic 4-year program which will encompass 3 years of intensive teaching and practical training at various eye hospitals in the tri-city, followed by 1 year of clinical internship and hands on learning at eye Hospitals across the country.



## **2-Year Masters of Optometry (M. OPTOM)**

A hands-on program with rigorous theoretical training that integrates didactic classroom lectures with clinical practice.

### **Program Overview**

A higher professional degree in Optometry equips students to offer specialist advice on eye care and provide timely diagnostic intervention. Sound training in Optometry also enables professionals to specialise in the fields of low vision, advanced contact lenses, binocular vision, vision therapy, rehabilitation, neuro optometric rehabilitation and behavioural optometry etc.

This program offers students excellent advantage in terms of hands-on exposure and rigorous theoretical training. In a nutshell, a career in Optometry offers personal growth, unlimited opportunity, respect in society, contribution to the community for improving healthcare, and as a result good quality of life, job flexibility and financial success.

### **Program Highlights**

Masters in Optometry is recommended to the graduates in Optometry to enhance their knowledge in Vision Science, Clinical diagnosis & Optometric Management Practices. This course trains participants for professional specialisation in various areas of Optometry: contact lenses, pediatric optometry, low vision, practice

management etc. Further, they will be able to conduct eye tests to examine the patient's vision, prescribe eyeglasses & contact lenses, provided vision therapy & low vision rehabilitation as and when required. The course has a mixed academic focus – it trains students for both specialised professional practice and research.

At Chitkara University, the program offers students great advantages in terms of hands-on exposure and rigorous theoretical training. Students attend lectures at the campus and the clinical & research component of the curriculum is carried out with ASCO.

An Optometrist tests the visual acuity and prescribes corrective lenses. Adept at handling eye testing equipment to examine a person's vision, an Optometrist also fabricates lenses to prescribed specifications and fits them and other low-vision aids to suit individual requirements.

In fact, Optometry is the first line of defense against blindness as it deals with refraction, eyewear Rx, contact lens fitting, low-vision aid evaluation & referrals to Ophthalmology.





## Career Options in Optometry

According to several reports every third blind person in the world lives in India, 75% of whom can be ascribed to preventive blindness (cataract, refractive error), underscoring the need for timely detection and treatment. Whereas, India needs more than 40,000 Optometrists, the figure stands at below 10,000. Moreover, with most people over 40 (and even earlier) requiring glasses/ lenses, a skilled & experienced Optometrist is always in demand.

With an increasing aged population and the growing incidence of Macular Degeneration and Diabetic Retinopathy - Optometrists are an integral part of the primary eye care.

Optometrists usually work in eye hospitals, clinics and opticians' outlets or with multinational vision care

companies. After gaining experience in a private establishment or with a lens manufacturer, you can open your own practice. Flexibility in practice and myriad choices in geographic location are some of the many benefits of this profession.

You will be surprised to know that optometry features among the top 10 income-earning professions in the US. Following are the roles students can apply for after finishing their Masters in Optometry:

Vision Therapist | Behavioural Optometry Specialist  
Neuro-optometric Rehabilitation Professional  
Low Vision and Contact Lens Specialist  
Academician | Researcher | Entrepreneur

## Collaboration with Eye Hospitals

We have strong collaboration with the best eye hospitals to provide opportunity for hands on clinical learning to our optometry students:

- Sankara Eye Care
- Sankara Academy of Vision
- I Care
- Dr. Agarwals
- Centre for Sight Group of Eye Hospitals
- EYE Q
- PGI Chandigarh Advanced Eye Centre
- Thind Eye Hospital
- Bharat Vikas Parishad Charitable Medical Centre
- Sanjeevani Eye & Medicare Centre
- Drishti Eye Hospital
- Trilochan Netralaya
- Dr. Monica' Eye Clinic

## Campus Recruitment

Some of the major campus recruiters for our optometry students through the years have been:





## Physiotherapy Programs

Physiotherapy can be considered as a health profession which is concerned with maximisation of mobility and quality of life and plays a key role in improving the patient's health, well-being and quality of life.

Due to mechanisation and sedentary lifestyles, people face common musculoskeletal problems which include issues such as backache, stiff shoulders and neck, knee osteoarthritis, etc. While treating the disorders, the Physiotherapists work in conjunction in the multidisciplinary medical team.

A qualified Physiotherapist can:

- Establish a physical diagnosis and determine a client's movement potential.

- Plan and implement physiotherapy treatment programs, using specialised knowledge and skills in exercise prescription and hands-on techniques for the prevention and treatment of movement dysfunction.
- Undertake related professional activities such as research, teaching, administration and consultation.



## 4.5-Year Bachelor of Physiotherapy (BPT)

Physiotherapy involves assisting and encouraging patients to help themselves to reach greater levels of independence.

The emphasis is on the first two years of study of theory and practical, and is designed to give students a firm foundation in the subject area. This includes visualisation of dissection of the human body in order to obtain a thorough knowledge of the structure of the body, biomechanical basis for movement and exercises and biophysical basis for the use of modalities. In the third and fourth year of study, along with the theoretical foundation, clinical visits to the hospitals is conducted, including ward rounds and clinical demonstrations and discussions.

### Program Objectives

Our Bachelor of Physiotherapy program is designed to meet the international standards of the University and is taught by a highly qualified faculty. The program has a balanced exposure of both academic and clinical training and is a full-time course it is minimum 4 years and minimum six months of compulsory internship.

After successful completion of the program, the student would be able to achieve a level of efficiency:

- To detect and evaluate anatomical patho-physiological and psychosomatic impairments resulting in physical dysfunction in various age groups.
- To understand the rationale and basic investigative approach to the medical system and surgical intervention regimens; and accordingly plan and implement specific Physiotherapy measures effectively.
- To be able to select strategies for cure and care; adopt restorative and rehabilitative measures for maximum possible independence of a client at home, workplace and in the community.
- To ensure quality assurance and motivate the client and his family for desirable result.

# 2-Year Master of Physiotherapy (MPT)

The Master of Physiotherapy program helps students to develop the ability to use highly-developed clinical reasoning skills to assess, diagnose and treat people with movement problems caused by a wide variety of joint, muscle, nerve and metabolic disorders.

## Program Objectives

To prepare postgraduate students towards their professional autonomy and inculcate the concept of research and evidence based practice. To incorporate the concept of Management in Physiotherapy, experience in clinical training, partly undergraduate teaching and acquainting a student with the concept of quality care at the institutional as well as the community levels.

During the two-year degree, you will explore introductory and advanced Musculoskeletal, Neurological, Sports and Cardio-respiratory Physiotherapy treatment techniques applied to patients across the lifespan. Biomechanics, Occupational Health and Community Health are incorporated in various units of curriculum.

## Scope

The program makes use of modern teaching methods and a combination of theoretical aspects of the subjects with practical reinforcement endows the students with a superior knowledge and enables them to discover their hidden potential, realise the ever importance of hard work and hone their intellectual, analytical and managing skills towards a successful and fulfilling career, supplemented and guided by experienced and quality teaching throughout the course of study.

## Exposure

During the two-year Master program the students will get opportunity to access and explore the patient assessment and handling skills from NABH & JCI accredited corporate hospitals to NGO's and community wellness centre. Students will also have an opportunity to get exposed to advanced technologies in physiotherapy such as 3-D Motion Analyser, EMG-Biofeedback, Cardiopulmonary Exercise Testing – VO2 Max Analyser along with other recent advanced manual therapy approaches like Spinal Manual Therapy, PNF, NDT, Sensory Integration, Aquatic Therapy, Brain Gym, Dry-Needling and Kinesiotaping.

## We offer the following specialisations:

- Neurology
- Cardiorespiratory
- Sports
- Musculoskeletal

## Duration

The duration of Master of Physiotherapy is two years.



# Career Options in Physiotherapy

There are different employment opportunities for physiotherapists available in the market. This includes career opportunities in varied industries and firms.

Physiotherapists can also start their own practice and open their clinic.

With the changing health conditions and lifestyle of the people, the requirement for physiotherapists has increased and will continue to in the near future as well.

The following sectors and industries offer ample employment opportunities for Physiotherapists:

**Hospitals:** Hospitals mainly hire physiotherapists to help treat the patients for different departments. The patients can be affected with orthopaedic problems, obstetric problems, rehabilitation process for cardiology patients, medical and surgical problems, etc. These professionals work in close contact with the different specialists and experts of the medical field.

**Corporate Houses:** Physiotherapists hired by the corporate houses work for the health and fitness of their employees. The physiotherapists organise workshops and exercise sessions for the employees and promote them to stay fit and fine, both mentally and physically.

**Healthcare Centres:** Physiotherapists of a healthcare centre work on the patients' wellness and fitness and focus on areas of improvement. They also guide patients with their dietary plans and supplements that will help in boosting their metabolism.

**Private Clinics:** Work of a physiotherapist in a private clinic is similar to that at a hospital. The difference lies in the number of patients and the different categories of treatments and specialties. A clinic generally focuses on two or three specialities, unlike the hospitals which are often termed as multi-specialty hospitals.

**Universities:** The physiotherapists are hired by the universities to teach students the healthy way of living. They are hired either as professors or trainers to guide students through the subject-matter. They teach technical and theoretical parts to the students so that the batch of new and well-trained physiotherapists are ready for the nation.

**Rehabilitation Centres:** As the name suggests, these centres work mainly on improving the lives of patients admitted there. A physiotherapist here will help and support the experts working on the patients. Different exercises, for both mind and body, are taught by the physiotherapists in a rehabilitation centre.

**Orthopaedic Clinics:** An orthopaedic clinic focuses on problems related to deformities of muscles or bones. The role of a physiotherapist here is to train the patients to come out of their deformities with regular exercises. The physiotherapists work under the orthopaedic doctors and provide sessions to their patients at the clinic or at home.

**Sports and Fitness Centres:** A physiotherapist at a sports and fitness centre works with the experts for the fitness of the clients. Maintaining the records of the clients and to evaluate which fitness program should be scheduled for a particular day.

**Defence Establishments:** At a defence academy or establishment, the role of the physiotherapist rotates from planning the exercise sessions to treating the injuries of the defence personnel.



**PHARMACY**  
**ALLIED HEALTHCARE**  
**NURSING**  
**OPTOMETRY**  
**PHYSIOTHERAPY**



**PUNJAB**  
**HIMACHAL PRADESH**



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