

The proposed Arunai University for Medical and Health Sciences aims to establish itself as a multidisciplinary center of excellence in healthcare education, clinical training, biomedical research, healthcare technology, public health systems, and patient-centered healthcare practices. The university is proposed with a vision to integrate Medical Sciences, Nursing Sciences, Pharmacy, Allied Health Sciences, Clinical Research, Healthcare Technologies, Health Informatics, Biomedical Sciences, and Global Healthcare Systems under one comprehensive academic ecosystem.

The proposal includes the existing institutions of the parent management namely Arunai Medical College & Hospital, Arunai Institute of Nursing Education and Research, Arunai College of Pharmacy, and Arunai Para Medical College. The proposed university intends to transform these institutions into an integrated healthcare university that promotes innovation, interdisciplinary learning, clinical excellence, advanced healthcare research, and socially responsible healthcare education.

The proposed university has a plan of establishing major healthcare-focused domains/faculties at the proposed university:

I. Faculty of Medical Sciences

II. Faculty of Nursing and Allied Health Sciences

III. Faculty of Pharmaceutical and Clinical Research Sciences

IV. Faculty of Healthcare Technologies and Health Informatics

V. Faculty of Public Health, Rehabilitation and Biomedical Sciences

The proposed university at Tiruvannamalai aims to offer a wide range of undergraduate (UG), postgraduate (PG), super-specialty, fellowship, diploma, and research programs that reflect its commitment to distinctiveness, healthcare innovation, evidence-based practice, and integration of modern medical technology with patient-centered healthcare education. These programs are designed to address emerging healthcare needs of society, healthcare industries, hospitals, diagnostic centers, rehabilitation systems, pharmaceutical sectors, and global healthcare organizations.

The university emphasizes interdisciplinary and application-oriented learning across diverse healthcare domains including clinical medicine, healthcare technologies, biomedical sciences, public health systems, healthcare analytics, artificial intelligence in healthcare, digital diagnostics, medical simulation, genetic sciences, healthcare quality management, and healthcare ethics.

Distinctiveness is a cornerstone of the proposed programs, evident in offerings such as B.Sc. Accident and Emergency Care Technology, B.Sc. Cardio Pulmonary Perfusion Care Technology, B.Sc. Critical Care Technology, and B.Sc. Radiography and Imaging Technology, which integrate advanced healthcare technologies

with intensive clinical training to prepare students for modern tertiary healthcare environments. Similarly, the proposed M.Sc. Genetic Counselling and M.Sc. Global Health Security programs introduce a combination of genetics, preventive healthcare, epidemiology, and global healthcare preparedness to address emerging public health challenges and precision medicine advancements.

Programs such as B.Sc. Clinical Informatics and B.Sc. Clinical Documentation Improvement exemplify the integration of healthcare sciences with digital technologies, hospital information systems, healthcare data analytics, artificial intelligence, and electronic medical records. These programs are designed to prepare healthcare professionals capable of supporting digital transformation in modern healthcare systems and hospital administration.

The proposed university also emphasizes advanced simulation-based learning and competency-driven healthcare education. Programs such as M.Sc. Healthcare Simulation, M.Sc. Patient Experience, and B.Sc. Clinical Audit Specialist focus on patient safety, healthcare quality assurance, clinical risk management, simulation-based healthcare training, and patient-centered care systems. These distinctive programs are designed to address the increasing global demand for healthcare quality professionals and simulation-trained clinical experts.

The programs leverage modern healthcare technologies to enhance learning outcomes, clinical competencies, and research capabilities. Advanced laboratories, digital classrooms, AI-powered diagnostic tools, simulation centers, virtual anatomy systems, telemedicine platforms, and online healthcare learning systems support experiential and blended learning methodologies. For instance, courses like B.Sc. Diagnostic Cardiac Sonography and B.Sc. Radioisotope Technology provide exposure to modern imaging systems, diagnostic technologies, and precision healthcare applications used in advanced healthcare institutions.

The proposed university strongly integrates research-oriented education with healthcare innovation. Research-focused programs in Clinical Research, Biomedical Sciences, Health Informatics, Genetic Counselling, and Rehabilitation Sciences foster innovation through interdisciplinary learning, clinical investigation, healthcare analytics, and technology-enabled healthcare solutions. The institution plans to establish research laboratories, simulation centers, translational research facilities, and interdisciplinary healthcare innovation centers to strengthen academic research and healthcare advancements.

The integration of skill development programs and industry-oriented healthcare education ensures that the university addresses hospital and healthcare industry demands while promoting healthcare entrepreneurship and technological innovation. Programs such as M.Sc. Anaesthesia Associate, M.Sc. Physician Assistant, and B.Sc. Transplant Coordinator focus on highly specialized healthcare workforce development required in tertiary hospitals, critical care systems,

emergency healthcare services, and multidisciplinary patient management systems.

The proposed university also emphasizes sustainable healthcare systems, preventive healthcare education, community healthcare outreach, and public health preparedness. Programs related to Global Health Security, Public Health Systems, Community Healthcare, and Genetic Counselling are designed to create healthcare professionals capable of addressing global healthcare emergencies, epidemiological challenges, chronic disease management, and rural healthcare needs.

Evidence of integration of cutting-edge technologies such as Artificial Intelligence (AI), Machine Learning (ML), Digital Diagnostics, Health Informatics, Virtual Simulation, Telemedicine, and Biomedical Analytics into academic and research programs forms a major distinctive feature of the proposed university.

The proposed Arunai University for Medical and Health Sciences exemplifies the integration of emerging healthcare technologies into academic and research programs, fostering an environment of innovation and relevance to modern healthcare systems. Programs such as B.Sc. Clinical Informatics, B.Sc. Medical Laboratory Technology, and B.Sc. Radiography and Imaging Technology are prime examples of harnessing digital healthcare technologies and artificial intelligence to support accurate diagnosis, healthcare data management, and patient-centered clinical care.

The emphasis on simulation-based healthcare education ensures that students and researchers gain expertise in advanced healthcare technologies shaping the future of modern medicine. Programs such as M.Sc. Healthcare Simulation and M.Sc. Patient Experience focus on developing healthcare systems that improve patient safety, healthcare quality, clinical communication, and multidisciplinary healthcare coordination.

Renewable and sustainable healthcare practices are also integrated into healthcare education through hospital waste management systems, biomedical waste disposal systems, healthcare sustainability initiatives, energy-efficient hospital infrastructure, and environmentally responsible healthcare operations. The institution plans to establish green healthcare practices and sustainable hospital management systems aligned with global healthcare sustainability goals.

The proposed university's focus on emerging healthcare disciplines such as Clinical Anaplastology, Medical Dosimetry, Clinical Audit Systems, Genetic Counselling, Clinical Documentation Improvement, and Healthcare Simulation demonstrates strong differentiation from conventional healthcare institutions. These programs are designed based on future healthcare workforce

requirements, advanced hospital systems, digital healthcare transformation, and evolving global healthcare standards.

The proposed university under the “Deemed to be University” category submitted to UGC is unique and distinctive due to its integration of multidisciplinary healthcare education, advanced clinical training, healthcare technologies, simulation-based learning, patient-centered care systems, digital healthcare integration, biomedical innovation, and research-oriented healthcare education. The institution proposes to create a healthcare-focused academic ecosystem that combines medical sciences, nursing sciences, pharmaceutical sciences, allied health sciences, healthcare technologies, biomedical research, public health systems, and healthcare management under a single integrated university framework. This approach positions the proposed Arunai University as a future-ready center for healthcare education, clinical excellence, biomedical innovation, research advancement, and community healthcare development.

The following programs have been shortlisted as distinctive programs under various healthcare-focused domains and have been included in the proposal due to their uniqueness, future relevance, interdisciplinary integration, industry demand, and contribution to modern healthcare advancement:

- *M.Sc. Nursing Practitioner*
- *B.Sc. Diagnostic Cardiac Sonography*
- *B.Sc. Radioisotope Technology*
- *B.Sc. Transplant Coordinator*
- *M.Sc. Physician Assistant*
- *M.Sc. Anaesthesia Associate*
- *B.Sc. Clinical Documentation Improvement*
- *B.Sc. Clinical Informatics*
- *B.Sc. Bio Material Analyst*
- *B.Sc. Clinical Anaplastology*
- *M.Sc. Genetic Counselling*
- *M.Sc. Global Health Security*
- *M.Sc. Patient Experience*
- *M.Sc. Healthcare Simulation*
- *M.Sc. Medical Illustrator*
- *M.Sc. Medical Dosimetry*
- *B.Sc. Clinical Audit Specialist*
- *B.Sc. Medical Law & Ethics*

Through these distinctive academic programs, the proposed Arunai University aims to emerge as a nationally and globally recognized healthcare university committed to academic excellence, healthcare innovation, patient-centered care,

clinical competency, biomedical research, digital healthcare transformation, and societal well-being.

B.Sc. Transplant Coordinator

The B.Sc. Transplant Coordinator programme is designed to train healthcare professionals who can effectively manage and coordinate organ transplantation services within hospitals and transplant centres. The course introduces students to the medical, administrative, and ethical dimensions involved in organ donation and transplantation. Students learn the workflow of transplantation beginning from donor identification and brain death certification to organ retrieval, allocation, transportation, and transplant surgery coordination. The curriculum also focuses on transplant regulations, ethical practices, and national organ donation policies. Students develop strong communication and counselling skills to interact sensitively with donor families and recipients during emotionally challenging situations. Training also includes hospital documentation systems, transplant registries, legal compliance, and coordination with multidisciplinary medical teams such as surgeons, intensivists, nurses, and laboratory staff. Through academic learning and practical exposure, students gain the ability to manage time critical transplant processes while ensuring transparency, ethical conduct, and patient safety. Graduates are prepared to support transplant programmes, promote organ donation awareness, and strengthen the efficiency of life-saving transplant services in modern healthcare institutions.

Why it is distinct?

This programme is distinct in our country because organized transplant coordination education is still limited despite the growing demand for organ transplantation services. Hospitals require trained professionals who understand the clinical workflow, ethical responsibilities, and regulatory compliance associated with organ donation systems. By offering structured training in transplant coordination, this programme develops professionals capable of bridging communication between patients, donor families, and healthcare teams. Graduates contribute to improving organ donation awareness, ensuring transparent processes, and supporting national transplant registries. As organ transplantation expands across the country, trained transplant coordinators will play an essential role in improving access to life-saving organs and strengthening the national organ donation framework.

B.Sc. Radioisotope Technology

The B.Sc. Radioisotope Technology programme focuses on the medical application of radioactive substances used for diagnosis and treatment in modern healthcare. The course provides students with strong foundational knowledge in nuclear physics, radiation science, and nuclear medicine technologies. Students learn how radioactive isotopes are utilized in imaging techniques such as PET scans, gamma camera imaging, and other diagnostic procedures that help physicians detect diseases at early stages. The curriculum also includes radiation safety principles, isotope preparation techniques, quality

control procedures, and regulatory guidelines governing the safe use of radioactive materials. Students gain practical knowledge in operating nuclear medicine equipment and monitoring radiation exposure levels to ensure patient and staff safety. With increasing advancements in nuclear medicine and diagnostic imaging, trained professionals in radioisotope technology play an important role in supporting physicians in accurate disease detection and treatment planning. The programme prepares graduates to work in nuclear medicine departments, diagnostic centres, research laboratories, and healthcare institutions that use radiation based technologies.

Why it is distinct?

This programme is distinct in our country because nuclear medicine services are expanding rapidly while trained professionals in this specialized field remain limited. Advanced diagnostic technologies require skilled personnel who understand both radiation science and healthcare safety standards. By combining theoretical learning with practical exposure, the programme prepares graduates to safely handle radioactive materials, operate specialized imaging equipment, and support diagnostic services. The course also strengthens national healthcare capacity by developing professionals capable of supporting cancer detection, thyroid disease diagnosis, and other nuclear medicine applications. As healthcare technology continues to advance, this programme contributes to building a skilled workforce capable of supporting modern diagnostic and therapeutic services across the country.

B.Sc. Diagnostic Cardiac Sonography

The B.Sc. Diagnostic Cardiac Sonography programme focuses on non-invasive imaging techniques used to evaluate the structure and function of the human heart. Students gain comprehensive knowledge of cardiovascular anatomy, physiology, and common cardiac disorders. The programme trains students to perform echocardiography procedures that produce real-time ultrasound images of the heart, helping physicians diagnose and monitor cardiovascular diseases. The curriculum includes training in ultrasound technology, patient positioning, image acquisition techniques, and interpretation of diagnostic findings. Students also learn clinical documentation, patient care practices, and communication skills necessary for working in cardiology departments. Cardiovascular diseases remain one of the leading causes of mortality worldwide, and early diagnosis plays a crucial role in effective treatment. Through theoretical learning and clinical training, students develop the technical skills required to support cardiologists in identifying heart abnormalities, monitoring cardiac function, and assisting in diagnostic decision-making processes within modern healthcare systems.

Why it is distinct?

This programme is distinct in our country because the burden of cardiovascular diseases continues to rise while specialized diagnostic professionals remain limited. Hospitals and cardiac centres increasingly depend on trained sonographers who can perform accurate and reliable cardiac imaging. The programme addresses this healthcare need by developing professionals skilled in echocardiography and cardiovascular diagnostics. Graduates contribute to early detection of heart diseases, improved patient monitoring, and better treatment

outcomes. By strengthening diagnostic services within cardiology departments, the programme supports the country's efforts to improve cardiovascular health management and reduce complications related to heart diseases.

B.Sc. Bio Material Analyst

The B.Sc. Bio Material Analyst program focuses on the scientific study, evaluation, and application of biomaterials used in medical devices, implants, and prosthetic systems. Biomaterials play a critical role in modern healthcare as they are widely used in orthopaedic implants, dental prostheses, cardiovascular devices, and tissue engineering applications. This program provides students with a strong foundation in biology, chemistry, and materials science to understand how different materials interact with human tissues and biological systems. The curriculum includes topics such as biomaterial properties, biocompatibility testing, biomedical polymers, metals and ceramics used in medical devices, and laboratory techniques used to analyse these materials. Students also learn about the design, development, and quality evaluation of biomaterials to ensure safety and durability in clinical applications. In addition, the program covers regulatory standards, quality control procedures, and biomedical device safety guidelines followed in healthcare industries. Through practical laboratory training and case-based learning, students develop analytical skills required to test, evaluate, and validate medical materials used in healthcare products. Graduates of this program are prepared to work in biomedical laboratories, medical device industries, research institutions, and healthcare organizations that focus on developing safe and effective biomedical technologies.

Why it is distinct?

This program is distinct in our country because the biomedical device industry and healthcare technology sector are expanding rapidly, creating a growing demand for professionals who understand the science behind medical materials. Many advanced medical devices, implants, and prosthetic systems rely on specialized biomaterials that must be carefully tested for safety, durability, and compatibility with human tissues. However, there is still a shortage of trained professionals who possess both scientific knowledge and analytical skills in this field. The B.Sc. Bio Material Analyst program addresses this gap by preparing students with interdisciplinary knowledge that combines life sciences with material science and biomedical technology. Graduates are trained to analyze medical materials, support research in biomedical innovation, and ensure that healthcare products meet required safety and quality standards.

By developing expertise in biomaterial analysis and evaluation, this program contributes to strengthening the biomedical industry and supporting advancements in healthcare technology within the country. As the demand for safer implants, prosthetics, and medical devices continues to grow, professionals trained in biomaterial analysis will play an important role in improving patient outcomes and advancing medical innovation.

B.Sc. Clinical Anaplastology

The B.Sc. Clinical Anaplastology program focuses on the design, fabrication, and rehabilitation of prosthetic facial and body parts for patients who have lost

anatomical structures due to trauma, congenital defects, disease, or surgical procedures such as cancer resections. Clinical Anaplastology is a highly specialized field that combines medical science, artistic skills, and advanced prosthetic technologies to restore both the appearance and function of missing body parts. This program provides students with a strong foundation in human anatomy, facial morphology, prosthetic materials, and fabrication techniques used in reconstructive rehabilitation. The curriculum includes training in prosthetic sculpting, colour matching, silicone prosthesis fabrication, and digital technologies used in designing customized prosthetic devices. Students also learn patient assessment methods, rehabilitation procedures, and interdisciplinary collaboration with surgeons, oncologists, dentists, and other healthcare professionals involved in reconstructive care. In addition, the program emphasizes patient counselling and psychological support, recognizing the emotional and social impact of facial or bodily disfigurement. Through practical workshops and clinical exposure, students develop technical expertise and artistic precision required to produce realistic prosthetic restorations. Graduates are prepared to work in hospitals, rehabilitation centres, prosthetic laboratories, and research institutions that focus on restoring physical appearance and improving the quality of life for patients with anatomical defects.

Why it is distinct?

This program is distinct in our country because clinical Anaplastology is an emerging healthcare discipline with very limited formal education opportunities. Many patients who undergo surgeries for cancer, trauma, or congenital conditions require facial or body prostheses to restore their appearance and regain confidence in social interactions. However, the availability of trained professionals who specialize in designing and fabricating customized prosthetic restorations remains limited. The B.Sc. Clinical Anaplastology program addresses this gap by providing structured education that integrates medical knowledge with artistic design and advanced prosthetic technologies. Graduates of this program are trained to create personalized prosthetic solutions that match the patient's natural features in terms of shape, colour, and texture. This not only improves physical rehabilitation but also supports psychological recovery and social reintegration for affected individuals. As healthcare systems continue to advance and reconstructive treatments become more common, the need for specialized professionals in Anaplastology is steadily increasing. By developing skilled practitioners in this field, the program contributes to improving rehabilitation services and expanding access to advanced prosthetic care across the country.

M.Sc. Medical Dosimetry

The M.Sc. Medical Dosimeter program is designed to train professionals in the precise calculation and planning of radiation doses used in cancer treatment. Medical dosimeter is a crucial component of radiation therapy, ensuring that cancerous tissues receive the appropriate radiation dose while minimizing exposure to surrounding healthy organs. This program provides students with advanced knowledge of radiation physics, radiation biology, oncology principles, and treatment planning systems used in modern radiotherapy departments. The curriculum includes training in radiation dose calculation, treatment planning software, quality assurance procedures, and radiation safety protocols. Students

learn how to design personalized radiation therapy plans based on tumour location, size, and patient anatomy. The program also emphasizes collaboration with radiation oncologists, medical physicists, and radiotherapy technologists to ensure effective and safe cancer treatment. Through practical training and clinical exposure, students develop the ability to use advanced technologies such as linear accelerators, computerized treatment planning systems, and imaging-guided radiation therapy tools. The program also highlights regulatory standards and patient safety guidelines related to radiation use in healthcare. Graduates are prepared to work in oncology centres, cancer hospitals, and radiotherapy departments where they play an essential role in ensuring the precision and effectiveness of radiation-based cancer treatments.

Why it is distinct?

This program is distinct in our country because the incidence of cancer continues to rise, increasing the demand for advanced radiation therapy services. Modern cancer treatment relies heavily on precise radiation dose planning to improve treatment outcomes while protecting healthy tissues. However, there is still a shortage of trained medical dosimetrists who possess the expertise required to design accurate and safe radiation treatment plans. The M.Sc. Medical Dosimeters program addresses this critical need by preparing specialized professionals who understand both the scientific principles of radiation and the clinical requirements of oncology care. Graduates are trained to use sophisticated treatment planning systems and collaborate closely with oncology teams to ensure accurate dose delivery for each patient. By developing professionals with advanced knowledge in radiation therapy planning and safety management, this program strengthens the country's cancer care infrastructure. As radiotherapy technology continues to evolve, trained dosimetrists will play an important role in improving treatment precision, enhancing patient safety, and supporting the expansion of modern cancer treatment facilities across the country.

M.Sc. Medical Illustrator

The M.Sc. Medical Illustrator program focuses on the creation of accurate and visually engaging illustrations that communicate complex medical and scientific information. Medical illustration plays a significant role in healthcare education, research, patient communication, and scientific publications. This program combines knowledge of human anatomy, medical science, and digital visualization techniques to produce educational graphics, diagrams, animations, and three-dimensional models used in medical learning and professional training. The curriculum includes subjects such as human anatomy, biomedical visualization, digital illustration techniques, 3D modelling, animation, and graphic communication. Students learn to use modern design software and digital tools to transform complex medical concepts into clear and understandable visual formats. The program also emphasizes scientific accuracy, ethical representation of medical information, and effective visual storytelling for educational purposes. Practical training allows students to develop skills in designing medical textbooks illustrations, surgical diagrams, educational posters, digital animations, and interactive learning materials. Students also learn to collaborate with doctors, researchers, and educators to create visual resources that support teaching, research communication, and patient awareness. Graduates are prepared to work in medical publishing houses, research institutions, educational organizations, hospitals, and digital health communication platforms.

Why it is distinct?

This program is distinct in our country because medical illustration is still an emerging field with very limited formal academic training opportunities. Although medical education and research are expanding rapidly, there is a growing need for professionals who can visually communicate complex medical knowledge in an accurate and accessible manner. Medical illustrations are widely used in textbooks, academic journals, surgical training materials, and digital learning platforms, yet trained specialists in this field remain scarce. The M.Sc. Medical Illustrator program addresses this gap by combining scientific knowledge with artistic and digital visualization skills. Graduates are trained to create precise anatomical illustrations and educational graphics that support medical teaching, research dissemination, and patient education. These visual tools help simplify complicated medical concepts and improve understanding among students, healthcare professionals, and the general public. By developing experts in biomedical visualization, this program contributes to improving medical education, research communication, and healthcare awareness in the country. As digital learning and medical technology continue to expand, medical illustrators will play an increasingly important role in creating effective visual learning resources that support healthcare education and innovation.

M.Sc. Healthcare Simulation

The M.Sc. Healthcare Simulation program focuses on the use of simulation-based learning to enhance clinical education, patient safety, and healthcare training. Healthcare simulation uses advanced technologies such as high-fidelity mannequins, virtual reality systems, computer-based models, and simulated clinical environments to replicate real-life medical scenarios. This program provides students with comprehensive knowledge of simulation design, instructional methods, and technology used to train healthcare professionals in a controlled and risk-free environment. The curriculum includes subjects such as simulation pedagogy, patient safety principles, clinical scenario design, healthcare education methodologies, and evaluation of simulation outcomes. Students learn how to develop realistic training scenarios for medical emergencies, surgical procedures, and critical care situations. The program also emphasizes teamwork, communication, and decision-making skills that are essential for healthcare professionals during high-pressure situations. Practical training enables students to operate simulation laboratories, manage simulation equipment, and conduct structured training sessions for healthcare students and professionals. Graduates are prepared to work in medical colleges, nursing institutions, hospital training centres, and healthcare education organizations where simulation-based training is increasingly used to improve clinical competence and reduce medical errors.

Why it is distinct?

This program is distinct in our country because simulation-based medical training is still developing, despite the increasing demand for high-quality healthcare education and patient safety improvements. Traditional medical education often relies heavily on theoretical learning and limited clinical exposure, which can sometimes restrict opportunities for students to practice

complex medical procedures in a safe environment. Healthcare simulation addresses this challenge by providing realistic training experiences without posing any risk to patients. The M.Sc. Healthcare Simulation program prepares professionals who can design, manage, and implement simulation-based learning programs in healthcare institutions. These specialists help medical and nursing students practice clinical procedures, emergency management, and communication skills before working with real patients. This approach improves clinical competence and builds confidence among healthcare professionals. As healthcare systems in the country continue to modernize, the demand for simulation-based training is increasing in medical colleges, hospitals, and professional training institutes. By developing experts in healthcare simulation, this program supports improvements in medical education quality, patient safety practices, and overall healthcare system performance across the country.

B.Sc. Clinical Documentation Improvement

The B.Sc. Clinical Documentation Improvement (CDI) program focuses on improving the accuracy, completeness, and quality of clinical documentation within healthcare institutions. Clinical documentation plays a vital role in patient care, as it ensures that medical records clearly reflect the diagnosis, treatment provided, clinical decisions, and outcomes of patient care. This program provides students with comprehensive knowledge of medical terminology, disease classification, healthcare documentation standards, and electronic health record systems used in modern hospitals. The curriculum includes subjects such as clinical documentation practices, medical coding basics, health information management, hospital documentation systems, and healthcare regulations related to medical records. Students learn how to review medical records, identify documentation gaps, and collaborate with physicians and healthcare professionals to ensure that patient records are complete and accurate. The program also emphasizes the importance of maintaining confidentiality, ethical standards, and legal compliance in handling patient health information. Through practical training and case-based learning, students develop analytical and communication skills required supporting healthcare providers in improving documentation quality. Graduates are prepared to work in hospitals, medical record departments, health information management units, and healthcare organizations that focus on maintaining accurate clinical records and improving healthcare quality.

Why it is distinct?

This program is distinct in our country because the healthcare system is increasingly transitioning toward digital health records and standardized clinical documentation practices. Accurate clinical documentation is essential for ensuring patient safety, supporting clinical decision-making, facilitating healthcare research, and maintaining legal compliance. However, many healthcare institutions still face challenges in maintaining complete and standardized medical records due to limited trained professionals in this specialized field. The B.Sc. Clinical Documentation Improvement program addresses this gap by preparing professionals who can support healthcare providers in maintaining accurate and high-quality medical documentation. Graduates are trained to analyze clinical records, identify documentation deficiencies, and ensure that patient information is properly recorded according to national and international healthcare standards. By strengthening

documentation practices in hospitals and healthcare organizations, this program contributes to improving healthcare quality, supporting hospital accreditation processes, and enhancing transparency in patient care. As healthcare institutions increasingly rely on electronic health records and data-driven healthcare systems, trained clinical documentation specialists will play a crucial role in ensuring reliable and standardized medical information across the country.

B.Sc. Clinical Informatics

The B.Sc. Clinical Informatics program focuses on the integration of healthcare practices with information technology to improve the management, analysis, and utilization of clinical data. With the rapid digital transformation in healthcare systems, clinical informatics plays a vital role in ensuring that patient information is accurately recorded, securely stored, and effectively used for improving healthcare delivery. This program provides students with a strong foundation in health information systems, medical data management, and digital healthcare technologies used in modern hospitals and healthcare organizations. The curriculum includes subjects such as electronic health records (EHR), health information systems, clinical data analytics, healthcare databases, and data security. Students learn how to manage and analyze clinical data to support clinical decision-making, improve hospital workflows, and enhance patient care services. The program also covers topics related to healthcare regulations, privacy standards, and ethical practices in handling patient information. Through practical training and exposure to healthcare information systems, students develop the technical and analytical skills required to manage healthcare data efficiently. Graduates are prepared to work in hospitals, healthcare IT departments, health information management units, and research institutions that rely on digital technologies to improve clinical operations and healthcare outcomes.

Why it is distinct?

This program is distinct in our country because healthcare institutions are increasingly adopting digital technologies and electronic health record systems to improve efficiency and patient care. As hospitals transition from paper-based records to digital health systems, there is a growing need for professionals who understand both healthcare processes and information technology. However, the availability of trained professionals in clinical informatics remains limited, creating a significant workforce gap in this emerging field. The B.Sc. Clinical Informatics program addresses this need by preparing students with the knowledge and skills required to manage healthcare data systems and support digital transformation in healthcare organizations. Graduates are trained to ensure accurate data management, improve clinical workflows, and assist healthcare professionals in using information systems effectively for patient care and research. By developing experts in clinical data management and healthcare technology, this program contributes to strengthening the digital healthcare infrastructure of the country. As healthcare systems continue to evolve toward data-driven decision-making and integrated information systems, professionals trained in clinical informatics will play a critical role in improving healthcare quality and operational efficiency.

M.Sc. Genetic Counselling

The M.Sc. Genetic Counselling program focuses on training healthcare professionals to guide individuals and families in understanding genetic conditions, hereditary diseases, and the implications of genetic testing. With rapid advancements in genetics and genomics, genetic counselling has become an essential component of modern healthcare, particularly in areas such as prenatal diagnosis, inherited disorders, cancer genetics, and personalized medicine. This program provides students with a strong foundation in human genetics, molecular biology, genetic testing technologies, and clinical genetics. The curriculum includes subjects such as medical genetics, genetic risk assessment, prenatal and reproductive genetics, cancer genetics, and ethical considerations in genetic testing. Students learn how to interpret genetic test results, assess hereditary risks, and communicate complex genetic information in a clear and supportive manner to patients and families. The program also emphasizes counselling techniques, psychological support, and effective communication skills to help individuals make informed healthcare decisions. Through clinical training and case-based learning, students gain practical experience in working with healthcare teams including physicians, obstetricians, paediatricians, and oncologists. Graduates are prepared to work in hospitals, genetic laboratories, fertility centres, research institutions, and public health organizations that focus on genetic screening, diagnosis, and counselling services.

Why it is distinct?

This program is distinct in our country because genetic medicine is rapidly advancing while the availability of trained genetic counsellors remains very limited. With the increasing use of genetic testing in areas such as prenatal screening, cancer risk assessment, and diagnosis of inherited disorders, healthcare institutions require professionals who can interpret genetic information and guide patients in understanding the results. However, the lack of specialized training programs has created a shortage of qualified genetic counselling professionals in the country. The M.Sc. Genetic Counselling program addresses this gap by preparing graduates with both scientific knowledge and counselling skills required to support patients and families dealing with genetic conditions. These professionals play a crucial role in explaining complex genetic information, helping families assess hereditary risks, and guiding them through preventive and treatment options. By developing trained genetic counsellors, this program contributes to strengthening genetic healthcare services and supporting the integration of genomics into clinical practice. As precision medicine and genetic screening continue to expand, genetic counsellors will become essential professionals in improving disease prevention, early diagnosis, and personalized healthcare in the country.

M.Sc. Global Health Security

The M.Sc. Global Health Security program focuses on strengthening healthcare systems to prevent, detect, and respond effectively to public health threats at national and international levels. Global health security has become increasingly important due to the emergence of infectious diseases, pandemics, bio threats, and other health emergencies that can affect populations across borders. This program provides students with comprehensive knowledge of public health

systems, epidemiology, disease surveillance, and emergency preparedness strategies used to protect communities from health crises. The curriculum includes subjects such as global health policies, epidemiological methods, infectious disease control, health risk assessment, disaster management, and public health communication. Students learn how to monitor disease outbreaks, analyze health data, and implement preventive strategies to control the spread of infectious diseases. The program also emphasizes international health regulations, coordination between health organizations, and the development of national preparedness plans to manage large-scale health emergencies. Through practical training, case studies, and research activities, students develop analytical and leadership skills required addressing complex health security challenges. Graduates are prepared to work with public health agencies, government organizations, international health bodies, and research institutions involved in disease surveillance, emergency response, and health policy development.

Why it is distinct?

This program is distinct in our country because recent global health emergencies, including pandemics and emerging infectious diseases, have highlighted the need for stronger health security systems and trained public health professionals. Many healthcare systems face challenges in early detection of disease outbreaks, coordinated response planning, and effective communication during public health crises. As a result, there is a growing demand for professionals who understand both global health frameworks and national public health strategies. The M.Sc. Global Health Security program addresses this need by preparing graduates with the knowledge and skills required to strengthen disease surveillance systems, support emergency preparedness, and improve public health responses to potential threats. Students are trained to analyze epidemiological data, assess health risks, and contribute to policy development that protects communities from health emergencies. By developing professionals with expertise in health security, this program contributes to improving the country's preparedness for pandemics, biological threats, and other health challenges. Graduates will play an important role in strengthening national health systems, supporting international health collaboration, and ensuring better protection of public health in an increasingly interconnected world.

M.Sc. Patient Experience

The M.Sc. Patient Experience program focuses on improving the overall quality of care and satisfaction of patients within healthcare systems. Patient experience has become an essential component of modern healthcare delivery, as it reflects how patients perceive the care they receive, including communication with healthcare providers, hospital services, emotional support, and overall treatment outcomes. This program provides students with a comprehensive understanding of patient-centred care, healthcare service management, and strategies to enhance patient satisfaction and engagement. The curriculum includes subjects such as healthcare communication, patient safety, service quality improvement, healthcare management principles, and patient feedback analysis. Students learn how to evaluate patient experiences using surveys, feedback systems, and quality indicators. The program also emphasizes the importance of empathy, cultural sensitivity, and effective communication between healthcare providers and patients. In addition, students are trained to design and implement patient experience improvement programs within healthcare organizations. Through

practical training and case studies, students develop skills to identify service gaps, improve patient engagement, and strengthen hospital service quality. Graduates are prepared to work in hospitals, healthcare organizations, quality management departments, and patient relations units that focus on enhancing patient-centred healthcare services.

Why it is distinct?

This program is distinct in our country because healthcare institutions are increasingly recognizing the importance of patient-centered care and service quality in delivering effective healthcare services. Traditionally, healthcare systems have focused primarily on clinical treatment outcomes, with limited attention to the overall patient experience during the course of treatment. However, modern healthcare standards now emphasize patient satisfaction, communication quality, emotional support, and transparency in healthcare delivery. The M.Sc. Patient Experience program addresses this emerging need by preparing professionals who can evaluate and improve the way healthcare services are delivered to patients. Graduates are trained to analyze patient feedback, implement service improvement strategies, and foster a culture of empathy and patient-centered care within healthcare institutions. By developing specialists in patient experience management, this program contributes to improving healthcare quality, strengthening patient trust, and enhancing the reputation of healthcare organizations. As healthcare systems continue to evolve toward more patient-focused models of care, professionals trained in patient experience will play a crucial role in ensuring compassionate, responsive, and high-quality healthcare services across the country.

M.Sc. Physician Assistant

The M.Sc. Physician Assistant program is designed to train healthcare professionals who can work alongside physicians in providing comprehensive patient care. Physician assistants play an important role in supporting doctors in clinical settings by assisting in patient examinations, diagnosis, treatment planning, and follow-up care. This program provides students with advanced medical knowledge and practical clinical skills required to function effectively within multidisciplinary healthcare teams. The curriculum includes subjects such as human anatomy and physiology, clinical medicine, pharmacology, diagnostic procedures, and emergency care. Students are trained to perform patient assessments, record medical histories, assist in clinical procedures, and interpret basic diagnostic investigations under the supervision of physicians. The program also emphasizes patient communication, medical ethics, and healthcare documentation to ensure quality and safety in patient care. Clinical training forms an important part of the program, allowing students to gain hands-on experience in departments such as internal medicine, surgery, emergency care, and critical care units. Through supervised clinical practice, students develop the competence required to assist physicians in managing patients effectively. Graduates of this program are prepared to work in hospitals, specialty clinics, and healthcare institutions where they contribute to improving patient care and supporting efficient clinical services.

Why it is distinct?

This program is distinct in our country because the healthcare system is facing a growing demand for medical services due to increasing population and rising

healthcare needs. Many healthcare institutions experience shortages of physicians, particularly in rural and underserved areas. As a result, there is a strong need for trained healthcare professionals who can support physicians and help improve access to quality medical care. The M.Sc. Physician Assistant program addresses this need by preparing highly skilled clinical support professionals who work under the supervision of physicians to provide patient care services. These professionals help reduce the workload of doctors by assisting in patient evaluation, treatment procedures, and routine clinical management. By developing a workforce of trained physician assistants, this program contributes to strengthening healthcare delivery systems and improving patient access to medical services. Physician assistants enhance the efficiency of healthcare teams, support timely treatment, and help ensure better continuity of care. As healthcare demands continue to grow, this program plays an important role in building a skilled healthcare workforce that supports physicians and improves the overall quality of patient care in the country.

M.Sc. Nursing Practitioner

The M.Sc. Nursing Practitioner program is designed to prepare advanced practice nurses who can provide comprehensive and specialized patient care in various healthcare settings. Nursing practitioners play a crucial role in modern healthcare systems by supporting physicians, managing patient care, and delivering advanced nursing services. This program provides students with in-depth knowledge of advanced clinical nursing practice, patient assessment, diagnosis, treatment planning, and evidence-based healthcare interventions. The curriculum includes subjects such as advanced health assessment, clinical pharmacology, path physiology, patient management, and healthcare leadership. Students are trained to evaluate patients, monitor disease conditions, assist in treatment procedures, and provide preventive and rehabilitative care. The program also emphasizes critical thinking, decision-making, and effective communication skills that are essential for managing complex patient cases. Clinical training is an important component of the program, allowing students to gain practical experience in specialized areas such as critical care, emergency services, community health, and chronic disease management. Through supervised clinical practice, students develop the competence required to deliver advanced nursing care while collaborating closely with physicians and other healthcare professionals. Graduates are prepared to work in hospitals, specialized healthcare centers, and community health settings where they contribute to improving patient care and healthcare outcomes.

Why it is distinct?

This program is distinct in our country because healthcare systems are facing increasing demands for high-quality patient care due to population growth, aging populations, and the rising burden of chronic diseases. While physicians remain central to healthcare delivery, there is a growing need for advanced nursing professionals who can provide specialized patient care and support healthcare teams in managing complex medical conditions. However, opportunities for advanced nursing practice education have traditionally been limited in many healthcare institutions. The M.Sc. Nursing Practitioner program addresses this gap by preparing nurses with advanced clinical knowledge and practical skills required to take on expanded roles in patient care. Nursing practitioners are trained to perform detailed patient assessments, assist in

treatment planning, and provide continuous monitoring and care management. By developing advanced nursing professionals; this program contributes to strengthening healthcare delivery systems and improving access to quality care, particularly in areas with limited medical resources. Nursing practitioners help enhance patient care efficiency, support physicians in clinical management, and improve healthcare outcomes. As healthcare systems continue to evolve, trained nursing practitioners will play an increasingly important role in delivering patient-centered healthcare services across the country.

M.Sc. Anesthesia Associate

The M.Sc. Anesthesia Associate program is designed to train healthcare professionals who assist anesthesiologists in the safe administration and management of anesthesia during surgical and diagnostic procedures. Anesthesia associates play an important role in preoperative care by supporting anesthesiologists in monitoring patients before, during, and after surgical procedures. This program provides students with advanced knowledge of anesthesia techniques, patient monitoring, and critical care practices required in modern surgical environments. The curriculum includes subjects such as human anatomy and physiology, pharmacology of anesthetic agents, principles of anesthesia administration, airway management, and preoperative patient care. Students are trained to assist in preoperative patient assessment, preparation of anesthesia equipment, administration of anesthetic drugs under supervision, and continuous monitoring of vital signs during surgical procedures. The program also emphasizes patient safety, infection control, emergency response, and effective communication within surgical teams. Clinical training forms a significant component of the program, allowing students to gain hands-on experience in operating theatres, intensive care units, and emergency departments. Through supervised practical exposure, students develop the technical skills required to assist anesthesiologists in managing anesthesia procedures safely and efficiently. Graduates are prepared to work in hospitals, surgical centers, and critical care units where they support safe and effective anesthesia services.

Why it is distinct?

This program is distinct in our country because the number of surgical procedures performed in hospitals is steadily increasing due to advancements in medical technology and improved access to healthcare services. However, many healthcare institutions face a shortage of trained anaesthesia professionals who can support anaesthesiologists in managing preoperative patient care. As a result, there is a growing need for specialized healthcare professionals who are trained in anaesthesia support and patient monitoring. The M.Sc. Anaesthesia Associate program addresses this need by preparing skilled professionals who can assist anaesthesiologists in ensuring patient safety during surgical procedures. These professionals are trained to monitor patient vital signs, maintain anaesthesia equipment, and respond effectively to emergency situations in operating theatres and critical care environments. By developing a workforce of anaesthesia associates, this program contributes to improving surgical safety, enhancing the efficiency of operating theatre teams, and strengthening preoperative care services in healthcare institutions. As surgical services continue to expand across the country, trained anaesthesia associates

will play a vital role in supporting anaesthesiologists and ensuring safe and effective surgical care for patients.