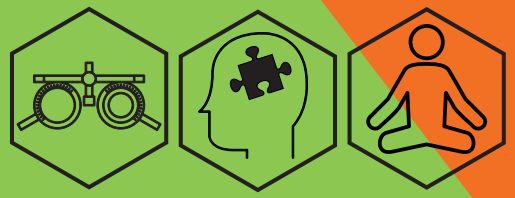
NSHM
KNOWLEDGE CAMPUS

Celebrating 25 years

INSPIRE
INNOVATE
EXCEL

Be the next in Health Sciences



NSHM Knowledge Campus

Life is full of possibilities. All you need to do is explore them. At NSHM, we provide our students with the perfect environment to explore the world of unlimited possibilities and craft their own success story across multiple disciplines like Business & Management, Media & Communication, Design, Health Sciences, Computing & Analytics, Engineering & Technology and Tourism & Hotel Management.

Today, NSHM has earned a nationwide reputation for its innovative approach to learning. It offers the best industry-integrated learning, internships and top-of-the-line placements. The students are provided with theoretical as well as practical learning, aided with hi-tech labs and infrastructure. Professional and scholarly ambience along with a fulfilling campus life ensures an all-round development of the students.

Our Legacy

Winner of ASSOCHAM India Award for Best Education Group in East, 2019

59 Degree Courses

7 Schools

More than

25,000

alumni working in India and abroad

Experiential Learning

Centres of Excellence

The Centres of Excellence at NSHM Knowledge Campus are committed to the holistic development of its students by grooming talented professionals through unique programmes and initiatives.

TAG
THINK . ACT . GROW
Innovation & Incubation

CENTRE FOR INNOVATION & INCUBATION

Determined to provide team-designed, team-delivered, experience-based and community-based applied learning, NSHM has endeavoured to create this unique platform and has christened it as TAG. This centre inspires, motivates and cultivates the innate human curiosity to bring out the genius in our students, taking them ahead on the path of creation, innovation and entrepreneurship.

NSHM Centre of Creative & Performing Arts
aangan

CENTRE FOR CREATIVE & PERFORMING ARTS

Aangan is a creative platform where NSHMites learn and showcase their creativity. Aangan features both traditional and contemporary training programmes. A fresh basket of training programmes is offered in every semester by the trainers from various creative disciplines. Aangan works closely with the student community and clubs of NSHM.

NSHM Centre for Language & Communication

CENTRE FOR LANGUAGE AND COMMUNICATION

NSHM CLC ensures the development of people skills among its students so that they are able to connect with the industry and its people, thereby emerging as successful professionals. Apart from conducting regular English and business communication classes, the centre conducts regular evening classes on the English language, foreign languages & employability skills.

Outreach
NSHM Centre for Social Action

CENTRE FOR SOCIAL ACTION

Outreach is involved in contributing to social causes by mobilising student volunteers to participate in various outreach activities, often in collaboration with charitable organisations and NGOs. It is a platform through which students and individuals can connect with the society and its people.

uday
NSHM CENTRE FOR SPORTS AND WELLNESS

CENTRE FOR SPORTS & WELLNESS

UDAY aims at contributing to the personal, physical & psychological growth and well-being of students, creating a sporting environment in NSHM. With its state-of-the-art fitness training & gym facilities, UDAY organises regular fitness training programmes and also organises various sports activities and events round the year. The centre is also committed to nurturing young sporting talents through regular training camps and practice.

CBEL

Choice Based Extended Learning

CBEL is Choice Based Extended Learning (CBEL) which is an exciting design to bring NSHM learners across all programmes and levels (UG-to-PG) in a cohort of CBEL programme, as per their choice. NSHM is one of the top education centres in India that offers 50+ CBEL programmes of 20-40 hours duration under 9 baskets.

The baskets are replete with curated multi-disciplinary programmes of useful and productive learning beyond the programmes of study of a learner. Moreover, CBEL will be all about active learning and are intended to extend the joy of learning through engaging activities. The maximum a learner can choose per semester is 4 programmes and the minimum one programme.

CBEL Programmes

- **Business Management**
  Course: Brand Management | Sustainable and Ethical Studies | Integrated Marketing Communication | Luxury Brand Management Marketability of Indian Craftsmanship | Social Entrepreneurship | Managing Workforce Diversity | Logistics and International Supply Chain Management | Lateral Thinking using de Bono Six Thinking Hats | Essentials of Entrepreneurship | Business Plan Formulation & Pitching
- **Communication & Creative Studies**
  Course: Cinematography | Set design | History of Art | Aesthetics | Sculpting | Event Management | Press & Public Relation | Product Photography | Design Thinking | Designing a Powerful Presentation | Effective Communication through Theatre | Music, Arts and Acting Appreciation | Monetising Social Media
- **Entrepreneurship**
  Course: Organic Product Making - Farm and Non-Farm
- **Health & Wellness Management**
  Course: Economic Evaluation of Various Diseases | Legal Issues in Health Care | Health Insurance Management | Ophthalmic Product Development | Self-Practitioner Optometrist | Metrics for Public Health | Clinical Data Management | Health Data Analytics | Pharmacokinetics with Calculations | Pharmaceutical Product Development | Mental Wellness | Yoga for Resilient and Resonant Personality Development | Yoga for Health Management | Wellness through Sports and Fitness Management
- **Hospitality Management**
  Course: International Travel Formalities | Tourism Destination Management | Customer Relationship Management in Tourism
- **IT & Analytics**
  Course: Research and Data Analysis | Working with Data | Field-survey Project Based Qualitative Analysis of Data | Data Privacy in The Digital Business | Data Analytics with Excel | Industry 4.0
- **Language & Linguistic Studies**
  Course: French | German | Sanskrit for Beginners | Phonetics, Linguistics, and Literature Appreciation
- **Professionalism & Skill Enhancement**
  Course: Image Development | Professional Attitude for Customer Service | Scientific Writing | Designing Impactful Presence | Emotional Intelligence
- **Socio-cultural Studies**
  Course: Universal Human Values | Indian Knowledge System: Introduction to Manuscriptology and Palaeography

Courses

Business & Management

BBA
BBA (Global Business)
BBA (Sports Management)
BBA (Supply Chain Management)
BBA (Accountancy, Taxation & Auditing)
MBA (Full Time)
MBA (Part Time)
M. Philosophy
B.Voc. - Banking, Financial Services & Insurance

Computing & Data Analytics

B.Sc. - Gaming & Mobile Application Development
Bachelor of Computer Applications
B.Sc. - Data Science
B.Sc. - Cyber Security
M.Sc. - Data Science & Analytics
M.Sc. - Information & Cyber Security
M.Sc. - Computer Science

Health Sciences

Bachelor of Pharmacy
Bachelor of Optometry
BBA (Hospital Management)
B.Sc. - Psychology
B.Sc. - Medical Lab Technology
B.Sc. - Yoga
B.Voc. - Medical Imaging Technology
Master of Optometry
Master of Pharmacy – Pharmacology
Master of Pharmacy – Pharmaceutics
M.Sc. - Clinical Psychology
Master of Public Health
Master of Hospital Administration
M.Sc. - Dietetics & Nutrition
M.Sc. - Yoga

Tourism & Hotel Management

B.Sc. - Culinary Science
B.Sc. - Hospitality & Hotel Administration
Bachelor of Hotel Management & Catering Technology
BBA (Travel & Tourism)
M.Sc. - Hospitality Management
Master of Tourism & Travel Management

Media & Communication

B.Sc. - Film & Television
B.Sc. - Media Science
M.Sc. - Film & Television
M.Sc. - Media Science

Design

B.Sc. - Fashion Design & Management
B.Sc. - Interior Designing
B.Sc. - Multimedia, Animation & Graphics
B.Sc. - VFX Film Making
M.Sc. - Fashion Management
M.Sc. - Animation & Graphics

Engineering & Technology

B. Tech. - Mechanical Engineering
B. Tech. - Robotics
B. Tech. - Civil Engineering
B. Tech. - Computer Science Engineering
B. Tech. - Artificial Intelligence & Machine Learning
B. Tech. - Data Science
B. Tech. - Electrical Engineering
B. Tech. - Electronics & Communication Engineering
Diploma of Civil Engineering
Diploma of Mechanical Engineering
B.Voc. - Automobile Servicing
B.Voc. - Refrigeration & Air-Conditioning

Health Sciences

The healthcare industry is one of the largest in terms of revenue & employment. The sector has registered a growth of more than 9% since 2000. At this current growth rate, the industry in India will touch US $275 billion by 2022, according to a recent press release by CII. At NSHM, we try to inculcate knowledge, skills and abilities essential for managing corporate hospitals. Students are trained to face challenging, real-life situations encountered in managing complex healthcare organisations and hospitals.

NSHM provides an ideal ambience for learning the different nuances of healthcare, with state-of-the-art infrastructure and efficient instructional delivery systems by reputed faculties.
The courses are tailored to give students a professional edge over competition and to prepare them for a wide spectrum of rewarding career opportunities in hospitals and healthcare facilities. The curriculum is a fine blend of theoretical learning and hands-on training through internships & workshops to give our students a professional edge over competition.

Pharmaceutical Technology

Bachelor of Pharmacy

Master of Pharmacy - Pharmacology

Master of Pharmacy - Pharmaceutics

B.Voc. - Medical Imaging Technology

Programme-Detail Structure

Affiliated to MAKAUT and approved by AICTE, as applicable

Name of the Programme	Bachelor of Pharmacy
Duration	4 years
Location	Kolkata

Programme Objective: To prepare students for quality drug research, development, use, and production as a pharma professional with modern knowledge, skills, and attitude in areas related to pharmaceutical chemistry, analysis, pharmacognosy, pharmacy practice and related vocations. Besides, they will be able to adapt to the changing and emerging instrumental methods, chemistry, herbal drugs, pharma practice, biotechnology, etc. for effective prevention, care, and rehabilitation of health with drugs and with utmost regard to continuous learning, medical ethics and social responsibility

Core Areas	Key Learning	Brief Description
Pharmaceutical Chemistry (Including Pharmaceutical Analysis)	Biochemistry	Molecular levels of the chemical process associated with living cells, biochemical facts and the principles to understand metabolism of nutrient molecules in physiological and pathological conditions, and emphasis on genetic organization of mammalian genome and hetero & autocatalytic functions of DNA
	Instrumental Methods of Analysis	Application of instrumental methods in qualitative and quantitative analysis of drugs, principles and instrumentation of spectroscopic and chromatographic technique, and emphasis on theoretical and practical knowledge on modern analytical instruments that are used for drug testing.
	Medicinal Chemistry	Fundamental knowledge on the structure, chemistry and therapeutic value of drugs, structure-activity relationships of drugs, importance of physicochemical properties and metabolism of drugs, chemical synthesis of important drugs under each class, modern techniques of rational drug design like quantitative structure activity relationship (QSAR), Prodrug concept, combinatorial chemistry and Computer aided drug design (CADD), emphasis on the chemistry, mechanism of action, metabolism, adverse effects, Structure Activity Relationships (SAR), therapeutic uses and synthesis of important drugs.
	Pharmaceutical Analysis	Fundamentals of analytical chemistry and principles of electrochemical analysis of drugs
	Pharmaceutical Inorganic Chemistry	Monographs of inorganic drugs and pharmaceuticals
Pharmacognosy	Pharmaceutical Organic Chemistry	Classification and nomenclature of simple organic compounds, structural isomerism, intermediates forming in reactions, important physical properties, reactions and methods of preparation of these compounds, mechanisms and orientation of reactions, Chemistry of fats and oils, stereo-chemical aspects of organic compounds and organic reactions, important named reactions, chemistry of important hetero cyclic compounds, and emphasis on medicinal and other uses of organic compounds.
	Pharmacognosy and Phytochemistry	The subject involves the fundamentals of Pharmacognosy like scope, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medicinal properties. The main purpose of subject is to impart the students the knowledge of how the secondary metabolites are produced in the crude drugs, how to isolate and identify and produce them industrially. Also this subject involves the study of producing the plants and Phytochemicals through plant tissue culture, drug interactions and basic principles of traditional system of medicine.
	Herbal Drug Technology	Basic understanding of herbal drug industry, the quality of raw material, guidelines for quality of herbal drugs, herbal cosmetics, natural sweeteners, nutraceutical etc. The subject also emphasizes on Good manufacturing Practices (GMP), patenting and regulatory issues of herbal drugs

Core Areas	Key Learning	Brief Description
Pharmacy Practice & related	Pharmacy Practice	Drug distribution, drug information, and therapeutic drug monitoring for improved patient care, community pharmacy, dispensing of drugs, responding to minor ailments by providing suitable safe medication, patient counselling for improved patient care in the community set up.
	Pharmaceutical Microbiology	All categories of microorganisims especially for the production of alchol antibiotics, vaccines, vitamins enzymes etc.
	Pharmaceutical Biotechnology	Scientific applications of biotechnology in the field of genetic engineering, medicine and fermentation technology, new biological revolutions in diagnosis, prevention and cure of diseases, new and cheaper pharmaceutical drugs, transgenic crops and animals, and the future promises.
	Biostatistics and Research Methodology	Applications of Biostatics in Pharmacy, Descriptive statistics, Graphics, Correlation, Regression, logistic regression Probability theory, Sampling technique, Parametric tests, Non Parametric tests, ANOVA, Introduction to Design of Experiments, Phases of Clinical trials and Observational and Experimental studies, SPSS, R and MINITAB statistical software's, analyzing the statistical data
	Pharma Marketing Management	Understanding of marketing concepts and techniques, and their applications in the pharmaceutical industry.
	Computer Applications in Pharmacy	Database design and development, Database Management system, DBMS/RDBMS, computer application in clinical studies, and use of medical databases
	Environmental Sciences	Environmental system, status of its inherent or induced changes on organisms, physical and biological characters of the environment, social and cultural factors, and the impact of man on environment

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	Master of Pharmacy - Pharmacology
Duration	2 years
Location	Kolkata

Programme Objective: PEO1: Established themselves as successful professionals with strong multidisciplinary knowledge and technical competence in the field of Pharmacology & Toxicology and used the integration of knowledge and competence necessary for success in the profession.
PEO2 : Developed interdisciplinary approach and analytical thinking in designing and solving problems related to drug discovery process using modern analytical tools & techniques wherever necessary.
PEO 3: Attained the skill for understanding group dynamics with the objective to contribute positively towards collaborative activities and demonstrate the capacity for self management and team work through effective communication.
PEO 4: Pursued a career for lifelong learning with personal and professional growth, superior work ethics and character towards sustainable betterment of the society by engaging in self learning methodologies.

Core Areas	Key Learning	Brief Description
General and Systemic Pharmacology	Advanced Pharmacology	The Advance Pharmacology basically deals with information and skills to initiate and monitor drug therapy. One can improve the application of advanced clinical pharmacology, that basically include the pharmacokinetics, techniques and methods of drug prescribing, approaches to data collection, and problem solving with discussions about drug therapy for common acute and chronic diseases.
	Molecular Pharmacology	This division of Pharmacology basically design is an program that focuses on the scientific study of the biochemical and biophysical characteristics of drugs at the molecular level and their interaction with, and effects on, biological macromolecules and cellular structures and processes.
	Pathophysiology	Study of causes of diseases and reactions of the body to such disease producing causes. Thorough knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications, and understanding of basic pathophysiological mechanisms. Baseline knowledge to practice medicine safely, confidently, rationally and effectively.
	Human Anatomy & Physiology	Fundamental knowledge on the structure and functions of the various systems of the human body, homeostatic mechanisms, and about the basic knowledge required to understand the various anatomical and physiological features and use.
Experimental Pharmacology and Research	Screening	This branch of Pharmacology basically deals with the development or establishment of pharmacological effects of new chemical, biological effects of drug candidate or establishing a one drug for other effects on various in vitro or in vivo model system.
	Toxicology	Toxicology is the study of the adverse effects of chemical, physical, or biological agents on living organisms and the ecosystem, including the prevention and amelioration of such adverse effects.
	Drug discovery	The complexity in drug development has increased manifolds over the past 40 years, requiring preclinical testing, investigational new drug (IND) applications, and completed clinical testing before marketing approval from the FDA. Generally, new drug applications (NDAs) or biologics license applications (BLA) are reviewed comprehensively before approval, and then drug performance is resubmitted to regulatory agencies for post-marketing studies. The overarching goal is to bring more efficient and safer treatments to the patients as quickly as possible after a thorough medical evaluation.
Clinical Pharmacology	Pharmacovigilence	Pharmacovigilance- is a broad term that describes the collection, analysis, monitoring and prevention of adverse effects in drugs and therapies. It is a completely scientific and process-driven area within pharma.
	Adverse Drug Reactions	An adverse drug reaction (ADR) can be defined as 'an appreciably harmful or unpleasant reaction resulting from an intervention related to the use of a medicinal product; adverse effects usually predict hazard from future administration and warrant prevention, or specific treatment, or alteration of the dosage regimen

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	Master of Pharmacy- Pharmaceutics
Duration	2 years
Location	Kolkata

Programme Objective: PEO1: Established themselves as successful professionals with strong multidisciplinary knowledge and technical competence in the field of Pharmaceutics & applied Pharmaceutical Technology and used the integration of knowledge and competence necessary for success in the profession.
PEO2: Developed interdisciplinary approach to analyze and solve complex problems, interpret data using modern analytical tools & techniques in the field of Pharmaceutics & applied Pharmaceutical Technology.
PEO3: Attained the skill for understanding group dynamics with the objective to contribute positively towards collaborative activities and demonstrate the capacity for self management and team work through effective communication.
PEO4: Pursued a career for lifelong learning with personal and professional growth, superior work ethics and character towards sustainable betterment of the society by engaging in self learning methodologies.

Core Areas	Key Learning	Brief Description
Industrial Pharmacy	Physical Pharmacy	Preformation Concepts, Stability testing, Optimization techniques, Pharmaceutical Validation, Factorial designs, Compression and compaction, Diffusion parameters, Dissolution parameters, Heckel plots
	Novel Drug Delivery System	Micro Capsules, Monoclonal Antibodies, Brain specific delivery, Pulmonary Drug Delivery, Niosomes, Aquasomes, Phytosomes, Electrosomes, gene therapyLiposomal gene delivery systems,
	Pharmaceutical Engineering	Operation of equipments, standard SOP, Validation, optimization of parameters, equipments and their maintenance
	Quality Assurance	Aspects of quality control and quality assurance, cGMP, QC tests, documentation, quality certifications and regulatory affairs, modern analytical techniques
	Cosmetics	Misbranded and spurious cosmetics, Biological aspects, Regulatory provisions relating to manufacture of cosmetics, loan license, offences and penalties, Emollients, rheological additives, preservatives, moisturizing cream, vanishing cream, cold cream, shampoo and toothpaste, Design of cosmeceutical products, Herbal Cosmetics
Biopharmaceutics	Biopharmaceutics and Pharmacokinetics	Pharmacokinetics, distribution, absorption, metabolism, excretion, bioavailability, bioequivalence, protein binding, drug safety & efficacy, design of dose, clinical pharmacokinetics, compartment modeling, immunotherapy
	Modern Drug Delivery	Sustained release delivery, nanoparticulate drug delivery, microemulsion, liposome, targeted drug delivery, controlled drug delivery, Bioelectronic Medicines, Telepharmacy
	Computer Applications in Pharmacy	Statistical modeling, Computational fluid dynamics, Artificial intelligence, Robotics, market analysis, computational modeling, ICH Q8 guideline, Nucleoside Transporters, Optimization technology & Screening design, factorial design, Gastrointestinal absorption simulation,
Pharmaceutical Research	Biostatistics	Sample size, importance of sample size, factors influencing sample size, dropouts, statistical tests of significance, type of significance tests, parametric tests, ANOVA, Correlation coefficient, regression, analysis of variance, correlation, chi square test, null hypothesis, P values, degree of freedom, interpretation of P values
	Research Methodology	Practical difficulties, review of literature, study design, types of studies, strategies to eliminate errors/bias, controls, randomization, crossover design, placebo, blinding techniques, creativity in thesis writing

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	B.Voc. - Medical Imaging Technology
Duration	3 years
Location	Kolkata

Core Areas	Key Learning	Brief Description
Basic Anatomy	Basic Aanatomy	To prepare the students with knowledge and skills related to Sectional Anatomy & Terminology, Anatomical relationships/terminology, Anatomy of the upper thorax and mid thorax, Bony structures and muscles, Blood vessels, Lungs, heart and great vessels, Esophagus, Anatomy of the Abdomen, Abdominal blood vessels, Anatomy of the Pelvis- Bony structures and associated muscles, Digestive and urinary systems, Neuro Anatomy, Arterial/venous systems, Basal ganglia, Cranial nerves, Spine, Arterial/venous systems, Muscles, Glands and pharynx, Cable tools and equipments, X-Ray Imaging, Radiological positioning, CT scan, Ultrasound, and MRI. This will enable them to apply modern medical imaging tool, techniques, and technologies and also advance their expertise through higher studies and continous learning for practice and applications with ethics and social responsibility.
Tools, Equipment & Safety Measures	Tools Equipment	Non-Metallic Sheathed Cable - Un grounded & Grounded Power Supply Cable, Metallic Sheathed Cable, Multi-Conductor Cable, Coaxial Cable, Unshielded Twisted Pair Cable, Shielded twisted pair cable, Ribbon Cable, Armoured & Unarmoured Cable, Twin-Lead Cable, Twin axial Cable, Optical fiber cable, Connectors,
Radiology	X–Ray Imaging	X–Ray Tubes - Stationary & Rotation Anode, X–ray Consolestation (Demo of KV, MA and exposure time settings), Procedures to reduce Scattered Radiation, Focus Principle, Grids, Screen, Image intensifiers, Use of contrast materials.
	Radiological Positioning	Patient transfer technique - Turning the patient, Restraint techniques - Trauma, Pediatric, Geriatric, physically handicapped, disturbed patients, an aesthetized patient, moving chair & stretcher patients, Tubes & catheters, Nasogastric, chest, Urinary, intravenous, oxygen & other (Castsurgical & cardiac) Alcoholic, bed pans & urinals, Assessment.
	CT Scan	Basic Computed Tomography: Basic principles of CT, generations of CT, CT instrumentation, image formation in CT, CT image reconstruction, Hounsfield unit, CT image quality, CT image display, X-ray tube: Construction working and limitations, generations, methods of cooling the anode, anode rating chart, speed of anode rotation, angle of anode inclination, Focus, anode heel effect, Effect of variation of anode voltage and filament temperature, inherent filter and added filter, bow tie filter, effect on quality of the spectrum, Collimator designs: Pencil beam, Fan beam, Cone beam CT, Z-axis collimation, detector design – construction and working - Gas filled detectors – solid state detectors – flat panel detectors, Principles of tomography: advantages and limitations – generations – spiral CT –slip ring technology - Multislice CT – dual source CT - pitch – rotation time, Basic principles of Image Reconstruction: Back projection, analytical an iterative methods – MPR – MIP – volume rendering – surface shaded display (SSD) – bone reconstruction, CT artefacts: motion artefacts, streak artefacts, ring artefacts, partial volume artefacts etc. causes and remedy, Dose and Dosimetry: CT Dose Index (CTDI, etc.), Multiple Scan Average Dose (MSAD), Dose Length Product (DLP), Dose Profile, Effective Dose, Phantom Measurement Methods, Dose for Different Application Protocols, Technique Optimization
	Ultrasound	Basic Acoustics, Ultrasound terminologies: acoustic pressure, power, intensity, impedance, speed, frequency, dB notation: relative acoustic pressure and relative acoustic intensity. • Interaction of US with matter: reflection, transmission, scattering, refraction and absorption, attenuation and attenuation coefficients, US machine controls, US focusing. • Production of ultrasound: Piezoelectricity, Medical ultrasound transducer: Principle, construction and working, characteristics of US beam. • Ultrasound display modes: A, B, M

Core Areas	Key Learning	Brief Description
Radiology	MRI	Basic concepts of Magnetic resonance imaging (MRI): Atomic structure, Hydrogen as imaging medium, magnetism, precession, resonance, Electromagnetic radiation, NMR - basic concepts of MRI, Faraday's cage, Basic MR Image formation: RF Excitation, Relaxation (T1 and T2), Computation and display, Free induction decay, RF wave form designs. 3. Introduction to MR coils: Volume coils, Gradient coils, Slice selection, phase encoding, frequency encoding, Artifacts: Cause of artifacts, Image quality, image contrast, signal to noise ratio, resolution, artefacts, MR contrast agents, Advanced MR techniques, flow effects, MR angiography echo planner imaging, magnetization transfer, fat suppression, MR spectroscopy, functional imaging, Magnetic resonance hazards and safety, Recent development, MRI Scanners: Methods of MRI imaging methods, Head and Neck ,Thorax, Abdomen, Musculoskeletal System imaging, Clinical indications and contraindications, types of common sequences effects of sequence on imaging, Protocols for various studies, slice section, patient preparation; positioning of the patient; patient care-calibration -paramagnetic agents and dose, additional techniques and recent advances in MRI; image acquisition-modification of procedures in an unconscious or un co-operative patient, plain studies, contrast studies, special procedures, reconstructions, 3D images, MRS blood flow imaging, diffusion/perfusion scans, strength and limitations of MRI, role of radiographer, MR safety: instrumentation and biological effects
On Job Training		X Ray, Ct Scan, Mri Technician Training.

Career Direction

Pharmacy offers a highly rewarding career in both India and abroad. The Indian pharmaceutical industry is one of the world's largest, ranking 3rd in terms of volume and 13th in terms of value. By 2022, the domestic pharmacy market is expected to grow to $55 billion. Advanced knowledge and training in different branches of pharmaceutical sciences offer a wide range of career options to the students, some of which are mentioned:

Production

- Production Chemist
- Manufacturing Chemist
- Production Supervisor
- Production Officer
- Production Executive
- Production Manager

Quality Monitoring and R&D

- Quality Control Chemist
- Quality Assurance Chemist
- Product Development Chemist
- Research & Development Chemist

Teaching

- Lecturer
- Associate Professor
- Professor

Sales and Marketing

- Medical Representative
- Product Manager

Career in Govt. Administration

- Govt. Analyst
- Drugs Inspector

Career in Regulatory Bodies

- Drug Inspector (D.I.)
- Senior D.I.
- Deputy Drug Controller
- Asst. Drug Controller
- Drug Controller
- Drug Controller of India
- Regulatory Manager

Clinical Research

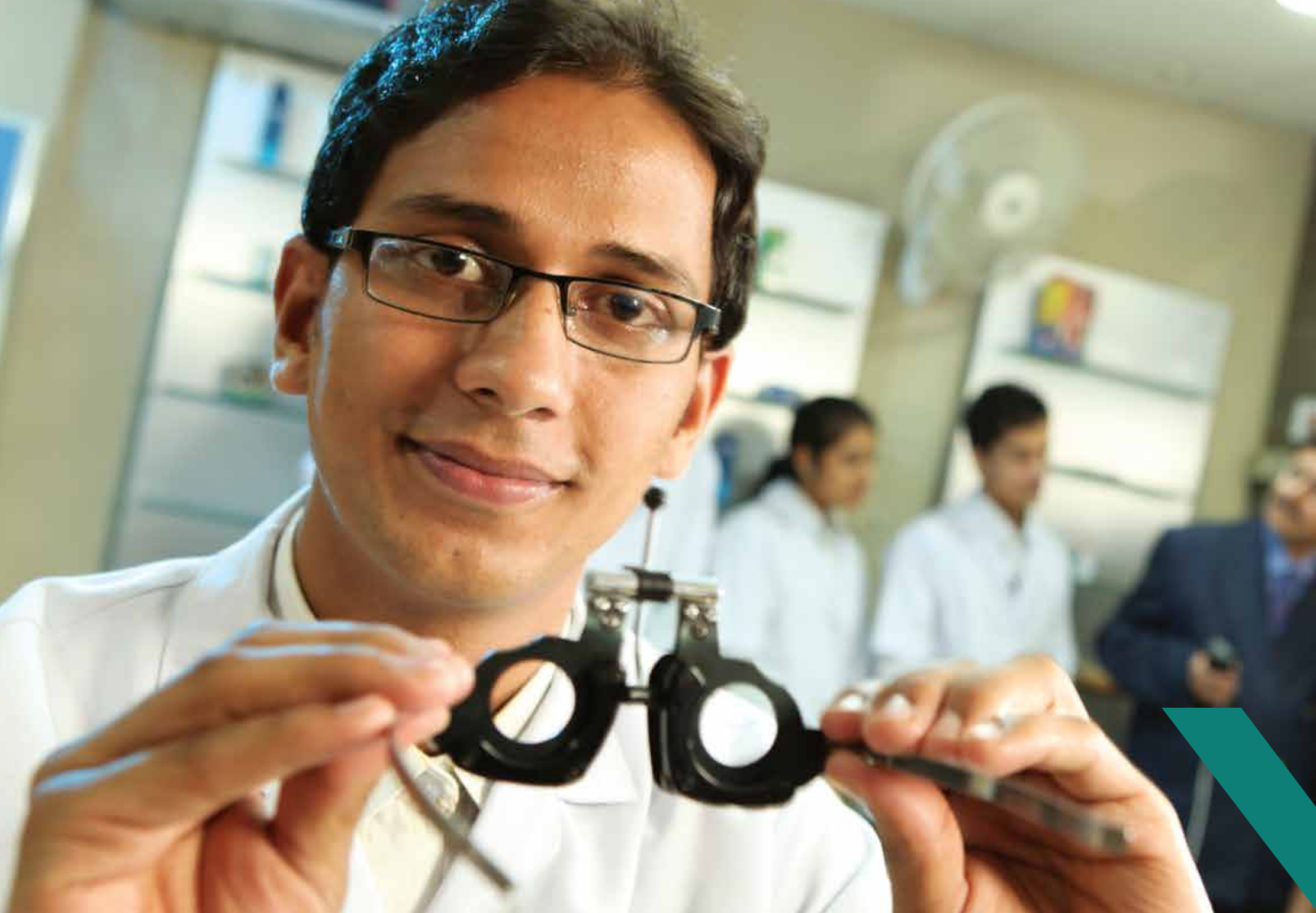
- Bioequivalence Studies
- Toxicological Studies
- Pharmacovigilance

Information Technology

- Data Analyst
- Data Manager
- System/Product Analyst

Placement Partners

- Cipla Ltd.
- Ranbaxy Laboratories Ltd.
- GlaxoSmithKline Pharmaceuticals Ltd.
- GSK Healthcare Pvt. Ltd.
- Nestle India Limited
- Johnson & Johnson Group
- Macleods Pharma
- Medica Hospital
- Cognizant
- Eris Life Sciences Pvt. Ltd.
- Biocon
- Fresenius Kabi India Pvt. Ltd.
- Palsons Derma Pvt. Ltd.
- East India Pharmaceutical Works Ltd



Vision Science

Bachelor of Optometry

Master of Optometry

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	Bachelor of Optometry
Duration	4 years
Location	Kolkata & Durgapur

Programme Objective: To prepare students for quality eye-care, as an independent practitioner and/or as an optometry professional with modern knowledge, skills, and attitude in areas related to optics and vision, instruments, diagnostics, speciality practices, clinical opthalmology, and public health. Besides, they will be able to adapt to the changing and emerging lens and dispensing techniques, clinical assessment of refraction, binocular vision, low vision, vision diagnostics and aids for effective prevention, care, and rehabilitation of vision health with utmost regard to continuous learning, medical ethics and social responsibility

Core Areas	Key Learning	Brief Description
Optics and vision	Geometrical & Physical optics	Mirrors and lenses, properties of the images formed on the retina, optics of the eye, study of light, its properties and its interaction with matter.
	Visual Optics	Concept of eye as an optical instrument, optical components of eye, types of refractive errors, clinical approach in diagnosis and management of various types of refractive errors.
Instruments & Diagnostics	Ophthalmic Instrumentation	Advanced learning of design, methods of different ophthalmic instruments and its diagnostic procedures in eye care
	Ophthalmic Lens & Dispensing	Spectacle lenses and frames, their materials, types, advantages and disadvantages, calculations involved, when and how to prescribe, the construction, design application and development of lenses, particularly the methods of calculating their power and effect.
	Optical and Ophthalmic Instrumentation	Commonly used optometric instruments, its basic principle, description and usage in clinical practice.
	Clinical Refraction	Various clinical refraction procedures, pediatric optommetry, special population,neuro optometric evaluation, sports vision etc
Optometry speciality Practices	Binocular Vision & Ocular Mobility	Theoretical aspects of Binocular Vision, ocular mobility, clinical application, normal binocular vision and space perception, Gross anatomy and physiology of extraocular muscles, various binocular vision anomalies, its diagnostic approaches and management
	Low Vision Aids & Visual rehabilitation	Science of low vision, epidemiology aspect of visual impairment, types of low vision devices and its optical principles, clinical approach of the low vision patients, assistive devices for totally visually challenged, art of prescribing low vision devices, training the low vision patients and other rehabilitation measures, causes of Low vision, functional and psychosocial consequences, best suitable low vision care through functional assistive devices and rehabilitation.
	Contact lens	Fundamentals of ocular lens, theoretical and practical aspects of Contact Lenses.
Clinical Ophthalmology	Microbiology & pathology	Basic biological, biochemical and pathogenic characteristics of pathogenic organisms.
	Ocular Anatomy and physiology	Gross, functional and applied anatomy, various structures in the eye and adnexa, structure and connections between the various parts of the central nervous system and the eye, normal functioning of all structures of the eye and their interactions, physiological aspects of normal growth and development of the eye, the phenomenon of vision
	Biochemistry	Structure ,function and interrelationship of biomolecules and consequences of deviation from the normal, Integration of various aspects of metabolism and their regulatory pathways, Understand metabolic processes taking place in different ocular structures.
	Ocular Disease	To understand various ocular diseases affecting various parts of the eyes. It covers clinical signs and symptoms, cause, pathophysiological mechanism, diagnostic approach, differential diagnosis and management aspects of the ocular diseases.
	Systemic condition and the eye	Definition, classification, clinical diagnosis, complications and management of various systemic diseases with its ocular manifestations.

Cont.

Core Areas	Key Learning	Brief Description
Public Health	Public Health and Community Optometry	Fundamentals of public health, basic sciences of public health optometry, community optometry, epidemiology of vision problems especially focused on Indian scenerio, case studies
	Pharmacology	Actions, uses, adverse effects and mode of administration of drugs related to eyes, application and interpretation, clinical optometry procedures in routine optometric examination
	Research methodology & Biostatistics	Fundamentals on qualitative and quantitative research methods, biostatistics and statistical application on vision data, data analysis, basic principles of research and methods, inferences from the research findings, field project

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	Master of Optometry
Duration	2 years
Location	Kolkata

Programme Objective: PEO1: Established themselves as successful professionals with strong multidisciplinary knowledge and technical competence in the field of Optometry & Vision Science and used the integration of knowledge and competence necessary for success in the profession.

PEO2: Developed interdisciplinary approach to perform complex vision-diagnostics and procedures for preventive and post-operative vision care using modern ophthalmic aids, tools & techniques

PEO 3: Attained the skill for advanced dispensing procedures as a practitioner and/or professional with the objective to contribute positively towards collaborative activities and demonstrate the capacity for self management and team work through effective vision health communication.

PEO4: Pursued a career for lifelong learning with personal and professional growth, superior work ethics and character by engaging in self learning methodologies.

Core Areas	Key Learning	Brief Description
Contemporary Practice and Insights	Occupational optometry	General aspects of occupational health, Visual demand in jobs, task analysis ,visual standards , occupational hazards and remedial aspects. Detail aspects of sports vision and its practice.
	Recent advances in optometry	Research and scientific advancements in optometry
	Business aspects in optometry	Setting up and managing an optomety practice with a practitioner's management skills
	Applied optometric optics	Theories of applied visual optics and various ophthalmic lens ,frames with its dispensing procedures.
	Applied Clinical Optometry	Application and interpretation of clinical optometry procedures in routine optometric examination
Diagnostics and Procedures	Advance Ophthalmic Diagnostics & Instrumentation	Advanced learning of design, methods of different ophthalmic instruments and its diagnostic procedures in eye care
	Pediatric Optometry Binocular Vision	Visual perception, behavioural vision care , vision therapy, various binocular vision anomalies investigations, assessment and management/ co- management of strabismic, non-strabismic binocular vision disorders , amblyopia, and with basics of Neuro optometric rehabilitation.
	Ocular Disease & Therapeutics	Evidence based approach to Diagnosis,clinical decision making to manage / co-manage anterior and posterior segment ocular diseases . Detail understanding of principles of genral pharmacology and application of ocular pharmacology
	Geriatric Optometry & low Vision	Vision related aspects in Geriatric population, causes of Low vision with its functional and psychosocial consequences and the best suitable low vision care through functional assistive devices and rehabilitation.
	Advance Contact lens practice	Design, uses and fitting philosopies of various speciality contact lenses ,management of contact lens related ocular complications and fitting philosophy of orthokeratology and myopia control.
Research	Epidemiology and Community Optometry	Basics of ocular epidemiology and to inculcate the theoretical knowledge and clinical exposure of community optometry.
	Research methodology & Biostatistics	Biostatitics and its statistical application with basic principles of research and methods applied to draw inferences from the research findings.

Career direction

Optometry is one of the top ten income earning professions in the country today. In an overly populated country like India, there are millions of people suffering from various kinds of defect in their eyes. We train our students for an array of lucrative career opportunities. Some of them are:

- Independent Private Practice
- Employment as Optometrist in Eye Hospitals and Hospitals with Eye Departments
- Professional Managers in MNCs
- Higher Education like Masters in Optometry
- Teaching & Research
- National/International NGOs in different Projects
- Research & Development Projects in Eye Care Industry
- Speciality Optometry Practices like Low Vision, Contact Lens, Binocular Vision, Occupational Optometry Entrepreneurship

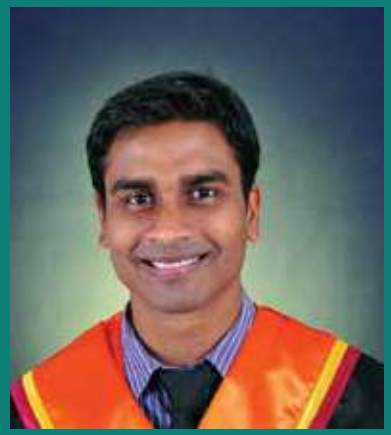
Placement

International

Gulf Optics Ltd., Doha, UAE
Delmon Optics, Bahrain
Optic Store, Dubai
Stan Isaacs, Singapore
Dar Optics, Oman & UAE
Tilganga Eye Hospital, Kathmandu, Nepal
Janki Eye Hospital, Janakpur, Nepal

National

Titan Eye Plus
Lawrence & Mayo
Essilor, India
GKB Hitech, Chennai
Carl Zeiss, Bangalore & Chennai
GKB Rx Lens Pvt. Ltd., Kolkata
Bausch & Lomb
Himalaya Optical
Reliance Vision Express
Alcon Laboratories
Johnson & Johnson
Sankara Nethralaya, Chennai & Kolkata
LV Prasad Eye Institute, Hyderabad, Bhubaneswar
Surya Eye Hospital
Dr. Shroff's Charity Eye Hospital, Delhi
MGM Eye Institute, Raipur
Dr. Agarwal's Eye Hospital, Chennai
C L Gupta Eye Institute, Ghaziabad
Dr. Daljit Singh Eye Hospital, Amritsar
BB Eye Foundation, Kolkata
Sankara Eye Care Institute, Bangalore
Sanjivni Eye Hospital, Ambala
Laxmi Eye Institute, Mumbai
Greater Lions Eye Hospital, Siliguri
Disha Eye Hospital, West Bengal
Susrut Eye Foundation, Kolkata
Rotary Narayana Nethralaya, Kolkata
Rajan Eye Care Institute, Chennai
Sankar Deva Netralaya, Guwahati



Hardy Mehta

Optometrist
Roosevelt Vision, Washington

NSHM provides its students with unparalleled clinical experience which gives us an edge in the world of optometry. With world-class faculty members, I received necessary guidance and direction.

Megha Roy

Consultant Optometrist
Titan Eye +

The knowledge imparted by teachers along with practical learning helped me become a better optometry professional.

Roheet Dhakkal

Consultant Optometrist
LV Prasad Eye Institute

The days spent at NSHM were the best days of my life. The course helped me gain practical and theoretical knowledge, making me a better professional.

Abhishek Singh

Optometrist
East Africa Moi Avenue

With advanced laboratories and extremely good faculty members, we were trained to excel in the field of Vision Science. Thanks to NSHM, I will be able to help people to see well.

Akansha Singh

Optometrist
Vitreoretinal Associates of Washington

NSHM provides its students detailed theoretical knowledge with hands-on experience which prepares us for a brilliant career in optometry.

Aadersh Gaddhyan

Optometrist
Susrut Eye Foundation

Experiential learning combined with state-of-the-art infrastructure and excellent faculty. I owe what I am today to NSHM.

Psychology

B.Sc. - Psychology

M.Sc. - Clinical Psychology

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	B.Sc. - Psychology
Duration	3 years
Location	Kolkata & Durgapur

Programme Objective: To prepare students with modern knowledge, skills, and attitude in areas related to cognitive processes, core and allied psychology areas, research and application, and mental health. Besides, they will be able to adapt to the emerging scientific and technological trends in developmental, clinical, social, cultural, and organizational psychology for effective prevention, care, and rehabilitation of health and mental well being by way of continuous learning and upholding ethics and quality of life of human beings.

Core Areas	Key Learning	Brief Description
Core Concepts of Psychology	Fundamental processes	Scope and development of Psychology, implications in social sciences, different schools of thought, branches and methods in use, role, function, and work of a graduate of a Psychologist, Career prospects - existing and emerging
	Cognitive processes	Understanding of the basic cognitive processes, such as, attention, learning, memory, emotion, motivation, psychophysics and perceptual systems.
	Developmental Psychology	Various aspects of human development with respect to physical, cognitive, social and emotional domains at all ages that would help increase their psychosocial functioning and develop a holistic and compassionate understanding about people around them.
	Clinical psychology	Develop preliminary ideas about psychopathology, various psychiatric disorders, prevalent developmental disorders seen during developmental age, etc.
	Social psychology	Various interpersonal, psychological and psychosocial processes, social and human behavioural factors, applications in daily living, communication and various other aspects of societal discourse.
	Organizational psychology	Understand and analyse different facets of organizational behaviour, especially, in the fields of motivation and leadership, managing emotion and behaviour in workplace, managing humans as a resource in organizational setup, etc.
	Biological basis of Behaviour	Structure of central and peripheral nervous system, functions and underlying physiological explanation of various psychological processes and disorders.
	Health Psychology	Understand the interaction and inter-relationship of physical health and psychological wellbeing, preventive aspects of health and lead fuller and more enriched lives.
Interface with Allied Disciplines	Environmental Management	Importance and sustenance of environmental resources, relevant SDG goals,and case studies.
	Cultural Psychology	Integrated understanding about different branches of social science, namely, anthropology and sociology, their interdependencies, and learning individual as a function of culture.
	Disability & Society	Analyse and understand different dimensions of disability and the integration of individuals with needs in an inclusive society.
Research and Application	Foundations of Research and Research Design	Foundational idea about quantitative research, descriptive and inferential statitistics relevant to social sciences and for future research endeavours.
	Laboratory experimentation and field study	Practical, hands-on exposure to research method of experimentation, sociometry, case study, psychological testing and more.
	Group endeavour for academic enhancement	Application of prior-learned concepts of Psychology, Conducting a scientific research, learn agency and be of aid during future investigation endeavours

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	M.Sc. - Clinical Psychology
Duration	2 years
Location	Kolkata & Durgapur

Programme Objective: PEO1: Established themselves as successful professionals with strong multidisciplinary knowledge and technical competence in the field of Clinical Psychology and used the integration of knowledge and competence necessary for success in the profession **PEO2:** Developed interdisciplinary approach and analytical thinking in designing and solving problems related to psychological phenomena using standardised psychometric assessment tools of intellectual functioning, executive functioning, personality, and various diagnostic tools. **PEO 3:** Attained the skill for understanding group dynamics with the objective to contribute positively towards collaborative activities and demonstrate the capacity for self-management and team work through effective communication.
PEO 4: Pursued a career for lifelong learning with personal and professional growth, superior work ethics and character towards sustainable betterment of the society by engaging in self learning methodologies.

Core Areas	Key Learning	Brief Description
Fundamental Knowledge of Psychology	Cognitive processes	Basic cognitive processes, such as, attention, learning, memory, psychophysics and perceptual systems.
	Theories of Personality	Learning and cognizing psychodynamic, behaviouristic and humanistic frameworks of personality.
	Biological basis of behaviour	Fundamentals of central and peripheral nervous system along with their functions and underlying physiological explanation of various psychological processes and disorders
	Social psychology	Various interpersonal, psychological and psychosocial processes to understand society that has applications in daily living such as communication, prosocial behaviour, aggression and gender identity.
	Organizational behaviour	Analyse different facets of organizational behaviour, with emphasis on work environment, performance appraisal and placements.
	Health Psychology	Relationship between physical health and psychological wellbeing and learn health-promoting lifestyles.
Psychopathology and Psychiatric disorders	Childhood and developmental disorders	Phenomenological and psychopathological etiology of neurodevelopmental disorders , intellectual disabilities and various other emotional and behavioural disorders of children.
	Disorders of adulthood	Continuum of normality and abnormality from the perspective of different neurotic and psychotic disorders, viz., anxiety disorders, schizophrenia, etc.
	Personality disorders	Different dimensions of personality highlighting on the different problems associated with it, special emphasis on the causal factors, and other disorders associated with personality problems.
	Sexual dysfunction	Different types of sexual dysfunctions along with their signs and etiology.
	Disorders of substance use	Concepts of use, harmful use, dependence, tolerance and withdrawal; and the detrimental impacts of psychotropic and psychoactive substances, mainly focusing on the consequences in the domains of emotion, behaviour, thought and perception.
Treatment and rehabilitation	Counselling skills and ethics	Counseling skills - to cognise and integrate the possibilities and limitations of therapeutic work, inculcate respect and maintain confidentiality and ethical guidelines.
	Basics of Psychotherapy processes	Different schools of psychotherapy, namely, psychodynamic, exsistential, behavioural (BT), cognitive, cognitive-behavioural (CBT), and third wave behaviour therapy, along with their techniques, stages, strategies, tools, applications,limitations, indications and contra-indications.

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Core Areas	Key Learning	Brief Description
Treatment and rehabilitation	Disorder-specific psychotherapy techniques and strategies	Different evidence-based psychotherapeutic approaches (BT, CBT, Interpersonal Therapy, Family and Couple therapy) of treatment of various anxiety disorders, mood disorders and schizophrenia related disorders.
	Psychosocial Rehabilitation	Impairment (structural and functional), handicap and disability and about primary, secondary and tertiary health care systems, their importance and efficacy in treatement and rehabilitation of individuals with physical disability and/or psychiatric illnesses.
Application of standardised psychometric tools	Standardised objective measures of intellectual functioning and personality	Assessment, including, but not limited to, theoritical background, administration, scoring and interpretation using standardised tests of intelligence such as Standard Progressive Matrices (SPM) and Wechsler Adult Intelligence Scale - IVth edition (WAIS-IV) and that of personality, such as, Eysenck Personality Questionnaire (EPQ) and Neuroticism, Extroversion, Openness to Experience Scale (NEO- PI and NEO-FFI)
	Projective techniques and tools	Assessment, including, but not limited to, theoritical background, administration, scoring and interpretation using standardised projective measures of personality, like, Rorschach Inkblot Test (RIBT) and Thematic Apperception Test (TAT) and emotional and behavioural traits, such as Rosenswig Picture-Frustration Test.
	Symptoms and Disorder-specific rating scales	Various symptom and syndrome-specific scales of psychopathology, such as, evaluation of mood, anxiety, disruptive behaviours, thought, perception etc.
	Application of rating scales on outdoor clients	Application of the aforementioned scales on outdoor clients
Research	Methods	Organised and systematic ways of finding evidence for psychological and psychosocial phenomena, using both quantitative and qualitative methodology, various statistical implications including those required for description of data, drawing inference and predicting for population, and integrative learning of scale construction through appropriate psychometric methods

Allied Health

B.Sc. - Medical Lab Technology

B.Sc. - Yoga

BBA (Hospital Management)

M.Sc. - Dietetics & Nutrition

M.Sc. - Yoga

Master of Public Health

Master of Hospital Administration

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	B.Sc. - Medical Lab Technology
Duration	3 years
Location	Durgapur

Programme Objective: To prepare students with knowledge and skills in fundamental aspects of human biology, pathology, histopathology, haematology, immunilogy & serology, immunohaematology & blood banking, clinical enzymology, parasitology & virology, clinical endocrinology & toxicology for superior rolesa and careers in medical lab diagnostics in diagonistic Labs and speciality, super-speciality, and multi-speciality healthcare institutions. Besides, they will be able to adapt to the modern and emerging medical lab technologies by way of lifelong learning and practice in a multi-disciplinary and diverse health environments and discharge their services with ethics, values and social responsibility.

Core Areas	Key Learning	Brief Description
Human Biology	Anatomy	Anatomical understanding: cells, tissues, muscles, skeleton, organs, and their structure and function in normal human body.
	Physiology	Cellular Physiology and Lymphatic System, Blood and CardiovascularSystem, Respiratory System, Gastrointestinal Physiology, physiological functions of cells, tissues, blood, and diseases phenomenon. .
	Biochemistry	Classification, functions,digestion, and absorbtion of carbohydrates, protein and fat, Enzyme- Defination, classification , abnormal secretion, Nuclic acid structure , function and types of RNA &DNA, Vitamins & Minarals, chemical properties of bio molucles , functions ,importance and their measurements.
	Microbiology	Fundamentals of microbiology, Microscoping, structure of microorganism, Antiseptic & Antibiotics, equipments, isolation of organism , safety measures in Microbiology Laboratory.
Mediacal Lab Diagnostics	Pathology	History of pathology, pathogenesis of disease, Inflamation, Tissue repair, different disease, pathogenesis of critical disease like cancer
	Histopathology	Tissue , its type & processing Microtome , knife & section cutting 3. Frozen section4. Haematoxylin & Eosin staining Histotechnique, specimen handling& staining.
	Haematology	Cell morphology & Anaemia, Haemoglobin , type & synthesis, Haematopoisis, Hemostasis & coagulation, blood disorders, and various types of tests for diagnosis.
	Immunology & Serology	Immunity, serological reaction and their utility in Lab diagnosis, Antigen -Antibody reaction, Types of antibody, Lab diagnosis by ELISA & RIA
	Immunohaematology & Blood Banking	Blood grouping, Blood banking system, Infectious disease marker determinatioin , Compatibility testing, Quality control in blood transfusion, Blood component apheresis
	Clinical Enzymology	Enzymes & co enzymes, Enzyme kinetic, Clinical significance of different enzymes, and automation in clinical laboratory
	Parasitology & Virology	Protozoology, Helminthology, Diagnostic method of parasites, property of virus, Oncogenic virus, life cycle and lab diagnosis of different medically significant parasites
	Clinical Endocrinology & Toxicology	Hormones and their classification, introduction to toxicology hormones, toxic substances related to disorders, and their measuring technique
	Diagnostic Molecular Biology	Composition of DNA, RNA, Basic transcription, PCR technology, Blotting technique
Medical Lab Management	Values & Ethics	Value Statement, Ethical principles, awareness for safety, Sample analysis, Data Privacy, Data Security, Inclusion, Patient care, and Fair practices
	Practice	Fair practices, Quality Management, Lab Accreditation, Audit, Clinical Laws, Lab Manuals, MIS, Health Communication, Organization Development, Continuous Improvement

Admission Helpline: 95472 77739

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	B.Sc. - Yoga
Duration	3 years
Location	Durgapur

Programme Objective: To prepare the students with knowledge, skills, and attitude to teach, train, practice Patanjali Yoga, Hatha Yoga, Therapeutic Yoga, and Practical Yoga. Besides, they will be able to advance its healing applications through continuous learning, practice, and spread those in the wider interest of all for higher spiritual enlightment, quality of life, and peace.

Core Areas	Key Learning	Brief Description
Fundamentals of Yoga	Introduction To Yoga Education & Indian Culture & The Basics Of Sanskrit Language	Philosophy of culture, human settlement in India, religious movements, cultural configuration, progress of India during the ages, Sanskrit Communication , etc.
Yoga Texts	Introduction To Epics & Puranas, Darshanas, Bhagavad Gita & Narada Bhakti Sutras	Concepts of Sankhya and Yoga, Carvaka philosophy, Jainism & Buddhism, philosophy of Nyaya, Vaisheshika & Mimamsa, purpose of the puranas, contributions in the contemporary societies, philosophy of dharmasashtras, smritis & manu-smriti, significance of Bhagavad Gita , types of yogas in the context of Bhagavad Gita, application of Bhagavad Gita in Human Life, nature of Bhakti, historical aspects of narada bhakti sutras, science of emotional Culture through Bhakti Sutra.
Patanjal Yoga Sutra	Patanjali Yoga Sutras	Various modification of mind, means of inhibiting them, understanding about the essence of Samadhi, Sadhana Pada, Vibhuti, and Kaivalya pada.
Hatha Yoga Texts	Hatha Yoga Texts	Understanding about pre-requisites & principles of Hatha yoga, relationship between Patanjali and Raja yoga, concept of yoga in other yogic texts.
Allied Sciences	Human Anatomy & Physiology And Basi Psychological Processes	Structure of the body, necessary functions of the body, involvement of body parts while practicing various postures of yoga, interface between Culture & Psychology, principles of Culture & Basic Psychological Processes, Culture & Gender interrelation.
Yoga and Health	Human System According To Eastern Concept, Yoga Philosophy & Health And Introduction To Common Ailments	Evolution of Human Body, Pancha Kosha Theory, Chakras, Mandalas, Vayus, Nadis & Swara Yoga, concept of health & disease, pathogenesis of psychosomatic diseases & principles of Yoga Therapy, etiology and pathogenesis of the disease states, identify the signs & symptoms and complications of the diseases, principles and practices of Yoga therapy for the diseases.
Therapeutic Yoga	Health & Illness: A Holistic Approach, Yoga Therapy & Other Systems Of Healing (Theory & Practice)	Concepts of ayurveda & naturopathy, compare with other systems of healing, tools and techniques of yoga practice: asana, pranayama, meditation, relaxation, yoga nidra, mudra, mantra etc., therapy of chronic disorders, imparting yoga therapy one-to-one, develop personalised practices for individual needs, asana practice with minimum interventions, understanding the contraindications.

Core Areas	Key Learning	Brief Description
Applications of Yoga	Philosophy Of Science & Consciousness, Teaching Practice, Dissertation & Presentation, Yoga Therapy Training, Karma Yoga (Field Work)	Nature of universe in yogic context, contribution of science & ancient scriptures, various aspects of mechanics & relativity & its interrelations, create positive classroom environment through effective communication & professionalism, critical thinking abilities, skills for working with groups, conduct yoga training classes, assess individual trainee's needs, individualized yoga training plan, design & develop group classes, communicate effectively, demonstrate a variety of yogic skills, query handling, lifestyle induced common ailments, management through yoga techniques, evaluate the effectiveness of the yogic strategies, holistic improvement of the quality of life of individuals in the community setting.
Practical Yoga	Advanced Yoga Practices & Pranayama & Meditation	Surya namaskara, yogasanas & kriyas, explain and demonstrate various yogasanas, explain and demonstrate the practices skillfully, explain the benefits, limitation and contraindications of each practice, understand the basics of Pranayama & demonstrate various breathing techniques, benefits and best times of practice, importance of yoga practice to begin meditation, need and challenges of meditation, importance of sound vibrations, impact on the body and mind, different approaches to yoga nidra & cyclic meditation, selected advanced yoga techniques, practically apply the techniques for promoting health and wellbeing, holistic management of various physical and mental aliments through specific yoga techniques.

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	BBA (Hospital Management)
Duration	3 years
Location	Kolkata & Durgapur

Programme Objective: To prepare students for administration, supervision and management of resources in health care industry and health care programs with skill and capacities in clinical support services, operations, systems, health communication, digital health, patient-care, customer relationship management, public relations & advocacy, and all spects of business management and development. Besides, they will be able to continuously improve the health care processes - Registration, billing, Patient Admission, Discharge, Insurance, Floor management, Reporting, life support, ambulatory services, facility emergencies, international admissions, waste management, infection control, hygiene & safety, audit, quality accreditations, workflow management, hospital automation, medical records, pharmacy, inventory, healthcare supply chain, etc. with moral, legal, and ethical responsibilities towards quality health assurance.

Core Areas	Key Learning	Brief Description
Health Informatics	Healthcare Organization	Fundamentals of health and care, health care and allied health care services, typical healthcare organization, various roles and functions, typical healthcare management system, transactions, MIS, and decison support systems
	Health Data Management	Fundamentals of database management system - DBMS/RDBMS, Data and Information support to all the stakeholders of Hospital, like – Patients, Doctors, Staff, Vendors, Insurance, Corporates, etc., Health system research - Discovering Patient Reported Outcomes Measurement (PROM) towards making the Hospital's services patient centric rather provider centric.
	Hospital Information System	Various modalities for Patient Registration in HIS, maintain database of visitors/patients etc, Describe the importance of Electronic Health Records/Medical Records/Computerized patient record systems, control on key operational and financial benchmarks, base for scientific decision making.
Health & Hospital Operations Management	Coordination with various departments	Fundamentals of - operations research, productivity, profitability, efficiency, effectiveness, qualitative and quantitative analysis, Major functions of Hospital Operations Management dept. – Reception, Registration, Admission, Transfer, Billing & Discharge.Medical, Housekeeping, Security, MRD, Lab, Radiology, Maintenance, Transport, Stores, IT, F&B
	Managing operational issues	Issues of OPD, IPD, Emergency, Day care, ICU & OT, Patient Education and Counselling, Managing Information Centre & Appointment scheduling, Managing TPA / Insurance help desk, Report despatch & delivery system, Documentation - Policies, Quality manuals, SOP & Reporting Issues, Documents management and Control, Licenses & Approvals required to set up & run Hospitals, Accreditations, Regulations, and compliances
	Medical Record Science	Medical terminology, medical record - types of records to be maintained by hospital, essential components of various records, method of automation - collection, storage, processing, and retrieval
	Patient Services and Satisfaction	Basics of human body system, visible symptoms of ill patients or patients who need immediate attention by medical team, special needs of vulnerable clients in the hospitals, diagnostics, Referrals, just-in-time patient care support, and other patient advisory services, Identify needs of the patients/carers to find resolution.Have adequate knowledge about internal process /promotions/tariffs/schemes/benefits which can be provided to patients.Use appropriate language and tone and listen carefully to the queries.
	Infection Control & Prevention	Basics on different types of spillage and their control, bio waste management, air circulation, health risks, common infectious diseases, immunization, hygiene: methods of cleanliness, hand hygiene, infection control/exposure control/ PPE, prevention and treatment of needle stick injury, incident reporting, etc.

Core Areas	Key Learning	Brief Description
Health Communication	Approaches	Attitudes, behaviour, theories and models for positive change, Approaches - Informative, Educating, Persuasive, and Prompting, Influence and empowerment - individuals, population, and communities to make healtheir choices
	Types	Verbal, Non-Verbal, and Written communication - enquiries, complaints, responses, sales, adjustment, collection, notifications, applications, Résumé, Memo, Agenda, Reports, advertisements, presentations, and for other professional needs across various mediums– print, electronic, and new media.
	Behavioural Aspects	Buiding presence - body language and dress code, Listening and speaking skills, appropriate language and tone, resonance, empathy, respect to gender/culture/age/social difference/language etc., conflict management, general and specific work etiquettes, ethics and value, feedback, and reporting

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	M.Sc.-Dietetics & Nutrition
Duration	2 years
Location	Kolkata & Durgapur

Programme Objective: PEO1: Established hands-on experience on biochemistry/microbiology/food science and industrial exposure on Food Analysis Technologies in the industry as a Food Analyst,Food Inspector,Food product development scientist etc.
PEO2: Developed as a Dietician, Nutritionist, Sports Nutritionist through industrial exposure as well as Marketing Professionals related to nutritional products.
PEO3: Attained positions as Public Health Nutritionist in goverment organizations / NGOs through community exposure, Academic, and R&D organizations.
PEO4: Pursued professional ethics, work-life management, Entrepreneurship, sustainable development issues to produce the feasible solution for health problems

Core Areas	Key Learning	Brief Description
Food Science	Components and Analysis of Food (Biochemical & Microbiological)	Chemistry of food components like proteins, carbohydrates and lipids, new food product development, nature of microorganisms involved in food spoilage, food infections and intoxications, and various preservation and control techniques, food - safety, engineering & processing, and technology, nutrition, and sensory analysis
	Diet Counselling Techniques	Patient counselling approach and skills, Dieterary health care, updated assessment and remedial techniques, evaluation, monitoring and control, etc.
Nutrition Science	Commuity Nutrition	Nutritional status assessment, community nutrition, women and child nutrition, nutrition kitchen garden, community nutrition training, WHO,UNICEF guidelines - community nutritionist, requirement analysis and provisioning for specific macronutrients, monitoring, evaluation, and control -critical periods in growth and development and impact of malnutrition etc.
	Geriatric and Sports Nutrition	Physiological changes, nutritional analysis, socio-psychological aspects of ageing, caregiving, geriatrics, sports nutrition, specialised clinic operations, etc.
	Therapeutic Nutrition	Therapeutic approach in diet, nutritional screening, nutritional status assessment, nutritional support system, other life-saving measures for the critically ill, role of immune enhancer, conditionally essential nutrients, immune suppressants, special diets in critical care, complications of nutritional support system, re-feeding syndrome and rehabilitation diets, etc.
Research	Epidemiological approach in nutrition	Concept of health disease spectrum, epidemiological research design, methods, analysis and application for disease control, levels of healthcare, development of public & private healthcare institutions and NGOs, etc.
	Biostatistics and its implication in nutrition research	Qualitative and quantitative methods, nutrition data preparation, data analysis, appropriate parametric and non parametric statistical tests, data visualization, decision-support, etc.

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	M.Sc. - Yoga
Duration	2 years
Location	Kolkata

Programme Objective: PEO1: Established as yoga instructor, trainer, consultant, or professional.
PEO2: Developed various yoga techniques to provide affordable and alternative healthcare solutions for the benefit of the society at every stage of life.
PEO3: Attained leadership qualities and entrepreneur skills by working and communicating effectively in interdisciplinary environment. **PEO4:** Pursued life-long learning and practice for professional development with a motivation to become a Yogacharya

Core Areas	Key Learning	Brief Description
Fundamentals of Yoga	History And Various Schools Of Yoga & Introduction To Sanskrit	History of yoga, yogic cultures of different schools, colloquial words of sanskrit, communicate and comprehend Sanskrit, and writing grammatically correct Sanskrit
Yoga Texts	Vedas Upanisads And Darsanas, Bhagavad Gita & Narada Bhakti Sutras	Major principles of Vedas & Upanishads, Sankhya and Yoga, concepts and philosophies of Carvaka, Jainism, Buddhism, Nyaya, Vaisheshika, Mimamsa etc., significance of Bhagavad Gita and types of yogas in that context, application of Bhagavad Gita in Human Life, nature of Bhakti, historical aspects of narada bhakti sutras, and science of Bhakti Sutra.
Patanjal Yoga Sutra	Patanjali Yoga Sutras	Various modification of mind and the means of inhibiting them, essence of Samadhi and Sadhana Pada, Vibhuti, and Kaivalya pada.
Hatha Yoga Texts	Hatha Yoga Texts	Pre-requisites and principles of Hatha yoga, relationship between Patanjali and Raja yoga, and other yogic texts.
Allied Sciences	Human Anatomy & Physiology And Psychology & Counseling	Structure of the body, necessary functions of the body, involvement of body parts while practicing various postures of yoga, theories of human psychology, personality traits, and the types, methods & ethics of counseling.
Yoga and Health	Yoga Philosophy & Health And Common Ailments	Health and disease, concepts of PanchaKoshas, pathogenesis of psychosomatic diseases & principles of Yoga Therapy, etiology and pathogenesis of the disease states, signs & symptoms, complications of the diseases, and Yoga therapy
Therapeutic Yoga	Yoga Therapy & Other Systems Of Healing (Theory & Practice)	Concepts of ayurveda, unani, siddha & homeopathy, concepts of yoga with other systems of healing, tools and techniques of yoga practice, including asana, pranayama, meditation, relaxation, yoga nidra, mudra, mantra etc. for therapy of chronic disorders, skills for imparting yoga therapy. Besides, personalised asana practice with minimum interventions and contraindications.
Applications of Yoga	Philosophy Science & Consciousness, Teaching Practice, Research Methodology, Dissertation & Presentation, Yoga Therapy Training, Karma Yoga (Field Work)	Research and its methodologies including statistical analysis, research problem and assessment parameters, proposal writing in yogic context, contribution of science & ancient scriptures, various aspects of mechanics & relativity & its interrelations, effective pedagogy to develop critical thinking abilities, yoga-trainer training, interaction & query handling, and community health management through yoga techniques
Practical Yoga	Advanced Yoga Practices & Pranayama & Meditation	Surya namaskara, yogasanas & kriyas, and various yogasanas -- benefits, limitation and contraindications of each practice, various yoga and meditation techniques, Pranayama & various breathing techniques, benefits and best times of practice, sound vibrations and their impact on the body and mind.

Admission Helpline: 90732 17630

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	Master of Public Health
Duration	2 years
Location	Kolkata

Programme Objective: PEO1: Established themselves as successful professionals in the fields of Public health and Community health towards the prevention of infectious diseases, physical and mental health.
PEO2: Developed meaningful research and development instruments under 'quality health for all' policy and education initaitives.
PEO3: Attained higher professional careers in public and private healthcare institutions, non-governmental organizations, both national and inter-national.
PEO4: Pursued lifelong learning for the value-advancement and ethical practice of knowledge and skills for the betterment of society

Core Areas	Key Learning	Brief Description
Health Education	Public Health Development	Social, behavioural, and environmental health aspects, Public Health development in India and around the world, role of Public Healthcare Institutions in Global Health System, Emergency, Disaster Preparedness and Response activities, Healthcare Systems and Outcomes: In reference to High, Low and Middle Income Countries, future of the Public Health, Challenges and Opportunities in 21st Century
	Assuring Quality in Health	Various aspects of quality control and quality assurance in Health, importance of quality standards, certifications and regulatory affairs, etc.
	Ethical Issues	Legislations and ethics in health science, Health research, promoting healthcare activities in institutional and field settings, etc.
Biostatistics	Application of Quantitative Techniques in Public Health	Research analysis of public health programs and projects, application of quantitative techniques, case studies and problem-solving, etc.
	Biostatistics Using R	Fundamentals of statistics, working with health data, statistical analysis using R, bio-statistics using statistical packages comonly used in Public Health Research, etc.
Public Health Decision-Support	Research Methodology in Public Health	Research design, research methods, Research analysis (using Statistical Packages) handling public health projects - using both qualitative and quantitative tools, field studies, reporting and communication
	Epidemiology	Concept of health & disease, epidemiological triad, application of epidemiological methods, role of epidmeiologists in disease prevention and control, screening and survey of the disease, healthcare's changing scenarios and measurements, etc.
	Health Informatics	Contemporary and emerging ICT in Public Health practice, concepts of - Health Information System, Databases, Electronic Medical Records, Data Standards in Public Health, data communication system, Interfaces & boundaries, Sytem environment, System types, Software & Application Software, Integrated Information System, Intelligence, and Decision-support system
Health Policy and Management	Application of Economics in Public Health	Fundamentals of health economics, disease burden: Local to global for chronic diseases, HIV/AIDS, Cardiovascular Diseases (CVD), Obesity, Injury Prevention and Control, Infant Mortality and Poverty, various public health settings with socially, culturally and economically diverse populations, especially vulnerable and disadvantaged groups, etc.
	Environmental Science	Scientific study of the environmental system, status of its inherent or induced changes on organisms, study of physical and biological characters of the environment, social and cultural factors, and the impact of health on environment, and vice-versa.
	Public Health Policy	Health Policy and Systems Research (HPSR), HPSR- elements and key characteristics, Policy on Health Planning, Administration, and overall governance in India, Health services administration, Impact studies - Health systems, Health policy , policy analysis, Health schemes and programs, etc.

Programme-Detail Structure

Affiliated to MAKAUT (formerly known as WBUT)

Name of the Programme	Master of Hospital Administration
Duration	2 years
Location	Kolkata & Durgapur

Programme Objective: PEO1: Established as senior level administrators in Health care sectors, in India and abroad.
PEO2: Developed expertise on the administration the non clinical issues in Health care Sector using IT.
PEO3: Attained higher benchmarks in delivering quality healthcare services at different levels of healthcare by way of continuous learning, practice, research, and development.
PEO4: Pursued on all needful requisites for becoming healthcare leaders.

Core Areas	Key Learning	Brief Description
Public & Community Health	Health Care Delivery	Healthcare delivery levels in India --Primary, Secondary & Tertiary Care, Government Policy and schemes, Health insurance, and delivery systems.
	Various types of Pandemic disease & their Impacts	Impact of various pandemic diseases like- Malaria, Leprosy, Cholera, Dengue, Covid -19 etc.
	Broad areas of Epidemiology	Assessing the relationship of exposure with a disease or an outcome - hypothesis based on the research question, study design - Cohort study, Case control study etc., solution approaches
	Disaster Management System	Managemnet of care & rescue in case of natural and man made disaster like- flood, earthquake, fire, crashes, etc.
	Variuos Health care Programmes	Continuos developement in Public Health and programmes like Malaria control Programme, Vision 2020, Nirmal Bharat Mission, National Health policies etc.
Health care planning	Plan to make a hospital	Various calculation & measures of statistical data for planning and establishment of a new Hospital in a community, needs assessment, clinical laws, hospital architechure and engineering-measurements, department layout, hospital resources planning, etc.
	Patient care	Planning for new discovered diseases, quick response plan and systems for critical care patients, rehabilitation planning, medical records management, inpatient and outpatient services, Patient Reported Outcomes Measurement (PROM), etc.
Hospital Operations Manangement	Daily Hospital operation	Special operation plans for running the hospital & its various department for 24x7, 365 days, ERP, etc.
	Equipment Management	Various equipment handling, training, maintenance, disposal, procurement, sterilization of instruments, backup, etc.
	Economics of Communicable Disease	Cost analysis for various healthcare planning, health insurance,health services marketing
	Economical Effect of alcohol Abusing	Economical effects of alcohol abusing , drug addiction & its impact.
Infection Control & Quality Assurance	Infection Controlling	Prevention & protection measures, practices for controlling the infection, and appropriate use of santizers and disinfectants
	Quality standard maintaining	Quality policy, Accreditations, Compliance, Assuarance, Audit, etc.

Core Areas	Key Learning	Brief Description
Health Information System	E-commerce/ E-business	Analyse systems for easy and faster transaction of services even when placed distantly.
	Decision Support system	How a decision support system assist physicians and other health professionals in clinical decision making.
	Basics of Commercial Software like SAP, Oracle Apps	How they become useful in delivering value-based and patient-centered services in Hospitals.
	Database Management System	Construct a handy database management system for all the stakeholders of Hospital, like – Patients, Doctors, Staff, Vendors, Insurance, Corporates, etc.
	Data Warehousing and Data Mining	Fundamentals of data warehouse, modeling, and data mining technology to handle massive quantities of historical data, clinical and hospital information for decision making.
	Online Analytical Process	Role of Online Analytical Process (OLAP) for data discovery, including capabilities for limitless report viewing, complex analytical calculations, and predictive "what if" scenario (budget, forecast) planning in Hospitals.
	Online Transaction Processing	Ease of doing business for Hospitals through online mode and also for developing CRM.
	Health Information Management	Complete control on key operational and financial benchmarks and also base for scientific decision making.

Events & Activities

Yoga Masterclass

A Yoga workshop with the International Yoga Guru Eddie Stern was organized for students, practitioners and aspirants to learn more in theory and practice about yoga.

Workshop on Dietetics & Nutrition

A workshop under Dr. Anindita Chakravarti, renowned academician and nutritionist, was organised by the dietetics and nutrition department for students to know about the latest practices in their area.

Seminar on psychology

Highly acclaimed psychologists, Dr. Anuttama Banerjee & Dr. Rima Mukherjee, were the guest speakers at this seminar organised for Psychology students to help them gain critical insights into their subject from the knowledge shared by the experts.

Asia-Pacific Optometry Summit

The summit included interactive scientific sessions, technical workshop and various other competitions.

NATCONPH 2020

National Conference on Pharmacy & Healthcare - NATCONPH 2020, provided a platform for insightful lectures and presentations on trending issues in pharmaceutical and allied healthcare by celebrated scholars and delegates from the industry and academia.

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