

Student Hand Book

IMHS Modern Pharmacy Course

DIPLOMA IN PHARMACEUTICAL SCIENCES



INSTITUTE OF MEDICINE AND HEALTH SCIENCES (IMHS) SRI LANKA













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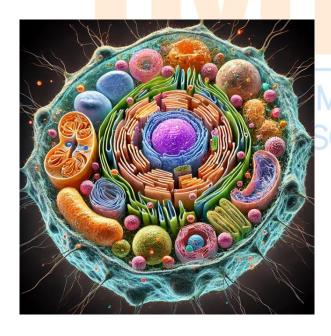


Module 01:

Anatomy, Physiology; Pathology & Pharmacology

Cell Biology & Human Structure

- Routes of Administration
- Introduction to Pharmacology
- Methodology of Clinical Trials
- Pharmacokinetics and Pharmacodynamics
- British National Formulary
- Pharmacopoeia





Module 02:

Anatomy, Physiology; Pathology & Pharmacology

Gastrointestinal Tract (GIT)

- Anatomy and Physiology of Human GIT
- Pathology of Human Gastrointestinal Tract
- Medications Used in Peptic Ulcer
- Laxative Medications for Constipation
- Medications Used for Diarrhea
- Rehydration Therapy & ORS

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Medications Used for Vomiting and Motion
 Sickness



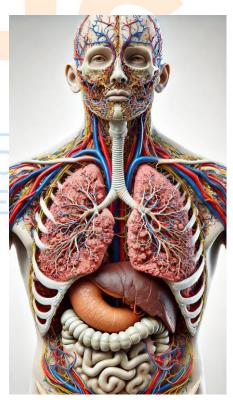
Module 03:

Anatomy, Physiology; Pathology & Pharmacology

Human Respiratory System (RS)

- Anatomy and Physiology of Human RespiratorySystem
- Pathology of Human Respiratory System
- Medications Used for Asthma and COPD
- Medications Used for Allergic Disorders



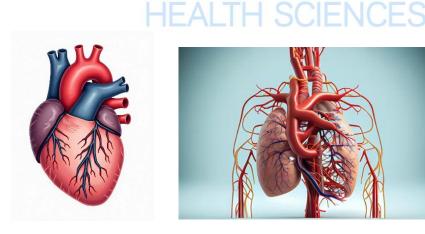


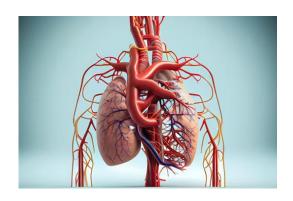
Module 04:

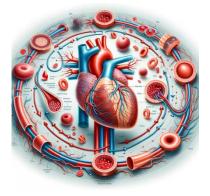
Anatomy, Physiology; Pathology & Pharmacology

Human Cardiovascular System (CVS)

- Anatomy and Physiology of CVS
- Pathology of Cardiovascular System
- Hypertension
- Angiotensin-Converting Enzyme Inhibitors
- Angiotensin II Receptor Blockers
- Calcium Channel Blockers
- Adrenergic Receptor Blockers
- . Medications Used for Angina
- Medications Used for Cardiac Arrhythmias





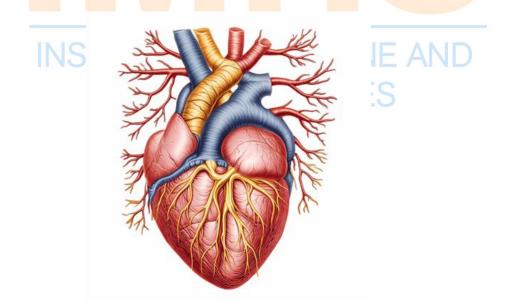


Module 05:

Anatomy, Physiology; Pathology & Pharmacology

Human Cardiovascular System (CVS)

- Medications Used for Cardiac Failure
- Hemostasis and Thrombosis
- Anticoagulant Medications
- Antiplatelet Medications
- Fibrinolytics and Antifibrinolytics
- Lipids, Lipoproteins & Hyperlipidemia
- Medications Used for Hyperlipidemia

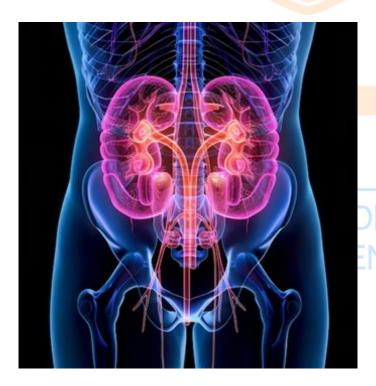


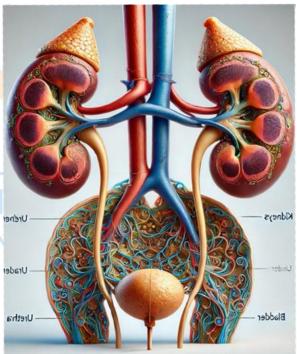
Module 06:

Anatomy, Physiology; Pathology & Pharmacology

Human Urinary System

- Anatomy and Physiology of Human Urinary
 System
- Diuretic Medications





Module 07:

Anatomy, Physiology; Pathology & Pharmacology

Human Endocrine System

- Anatomy and Physiology of Human EndocrineSystem
- Pathology of Human Endocrine System
- Thyroid Gland and Related Medications
- Pancreas and Diabetes Mellitus
- Insulin Used for Diabetes Mellitus (DM)
- Hypoglycemic Medications for DM
- · Adrenal Gland and Corticosteroids

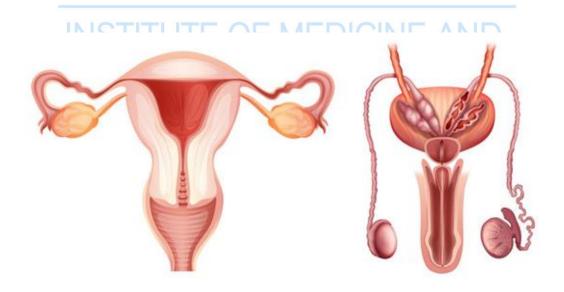


Module 08:

Anatomy, Physiology; Pathology & Pharmacology

Human Reproductive System

- Anatomy and Physiology of Human
 Reproductive System
- Hormones Related to Human Reproductive System
- Medications Used for Human ReproductiveSystem
- Contraception and Contraceptives



Module 09:

Anatomy, Physiology; Pathology & Pharmacology

Human Skeletal System

- Bone Metabolism & Related Hormones
- Medications for Metabolic Bone Disorders
- Inflammation and Anti-inflammatory Disorders
- Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)
- Medications for Rheumatoid
 Arthritis
- Medications for Gout Arthritis
- Anesthetic Medications
- Pain and Analgesics



Module 10:

Anatomy, Physiology; Pathology & Pharmacology

Infections

- . Infections & Anti-Infective Medications
- Penicillin Antibiotics
- Cephalosporin Antibiotics
- Protein Synthesis Inhibitor Antibiotics
- Nucleic Acids Synthesis Inhibitor Antibiotics
- Medications for Viral Infections
- Medications for Fungal Infections
- Medications for Protozoan Diseases + Malaria
- Medications for Helminthic Infections
- Medications for Tuberculosis (TB)
- Medications for Leprosy



Module 11:

Anatomy, Physiology; Pathology & Pharmacology

Human Nervous System

- Anatomy and Physiology of Human Nervous
 System
- Drugs Acting on Autonomic Nervous System
- Central Nervous System Medications:
 - Schizophrenia
 - Mania
 - Depression
 - Bipolar Disorders
 - Anxiety
 - Insomnia
 - 。 Dementia
 - Parkinsonism
 - Epilepsy



Module 12:

Anatomy, Physiology; Pathology & Pharmacology

- . Vitamins & Essential Minerals
- Poisons & Antidote Medications
- Medications for Cancer / Cytotoxic Medicines
- Immunization and National Immunization
 Program
- Chronic Kidney Disease (CKD) & Dialysis
- Natural Products Used in Pharmaceutical
 Industry





Module 13:

Forensic Pharmacy

- Forensic Pharmacy Introduction
- Medical Ordinance
- Poisons, Opium, and Dangerous Drugs
 Ordinance (PODDO)





HEALTH SCIENCES

Module 14:

Forensic Pharmacy - Regulatory Frameworks

National Medicines Regulatory Authority Act
 (NMRA) & Regulation





Module 15:

Pharmaceutics

- Introduction to Pharmaceutics
- Prescriptions Related
- Special Drug Delivery Systems
- Surgical and Medical Devices
- Antiseptics and Disinfectants





Module 16:

Pharmaceutics

- Introduction to Pharmaceutical Dosage Forms
- Solid Dosage Forms:
 - Tablets: Manufacturing and QC Testing
 - Capsules: Hard Gelatin, Soft Capsules, and
 Testing/QC
 - Suppositories & Pessaries



Module 17:

Pharmaceutics - Liquid and Semi-Solid Dosage Forms

- Pharmaceutical Solutions
- Pharmaceutical Suspensions
- Pharmaceutical Emulsions
- Semi-Solid Dosage Forms
- Gas Dosage Forms



Module 18:

Pharmaceutics

- Pharmaceutical Packaging & Sterile Products
- Sterilization of Pharmaceuticals & Sterile
 Pharmaceutical Products
- Pharmaceutical Degradations & Stability



Module 19:

Pharmaceutics - Unit Operations in

Pharmaceutical Industry

- Unit Operations
- Particle Size Reduction
- Mixing
- Drying
- Freeze Drying
- Filtration
- Centrifugation
- Evaporation
- Distillation
- Extraction HEA





Module 20:

Pharmaceutics - Best Practices and Calculations

- Good Manufacturing Practices
- Good Pharmacy Practices
- Pharmaceutical Calculations





Lead Educator for this Course





Dr. Isuru Wijesinghe (PhD)

- Senior Lecturer / Director IMHS
- PHD (USA) Healthcare & Pharmaceutical Sciences
- MSc (USA) Pharmaceutical Sciences
- BPharm Special (SL)
- Registered in Sri Lanka Medical Council
- LLB (Reading) (SL)
- 16 Years experiences in the Pharmaceuticals field

Faculty Members of the IMHS





Dr. Isuru Wijesinghe (PhD)

- Senior Lecturer / Director IMHS
- PHD (USA) Healthcare & Pharmaceutical Sciences
- MSc (USA) Pharmaceutical Sciences
- BPharm Special (SL)
- Registered in Sri Lanka Medical Council
- LLB (Reading) (SL)
- 16 Years experiences in the field



Mrs. MGEJ Dharmasiri

- Senior Lecturer / Director IMHS
- BPharm (Reading) (SL)
- Diploma in Pharmacy (Proficiency) (SL)
- Registered in Sri Lanka Medical Council
- Chief Pharmacist (Government)
- 15 Years experiences in the field



Dr. Niranga Meegaskada (MBBS)

- Senior Lecturer IMHS
- MBBS (SL)
- Senior Medical Officer (Government)
- Obstetrics and Gynecology
- 15 Years experiences in the field



Dr. P. Rasika Sanjeewa Pathirana (PhD)

- Senior Lecturer IMHS
- PHD (SL) in Plant Molecular genetics
- MSc (SL) in Biotechnology
- Master of Arts
- B.Sc Molecular Biology & Biochemistry
- Diploma in Pharmaceutical Management & Practice
- Registered Sri Lanka Medical Council
- 16 Years experiences in the field



Mr. V Hari Harshan

- Senior Lecturer IMHS
- MPharm (India)
- BPharm Special (India)
- Registered in Sri Lanka Medical Council
- Head of Formulation Development (SL)
- 11 Years experiences in the field



Ms. GWT Madhumali

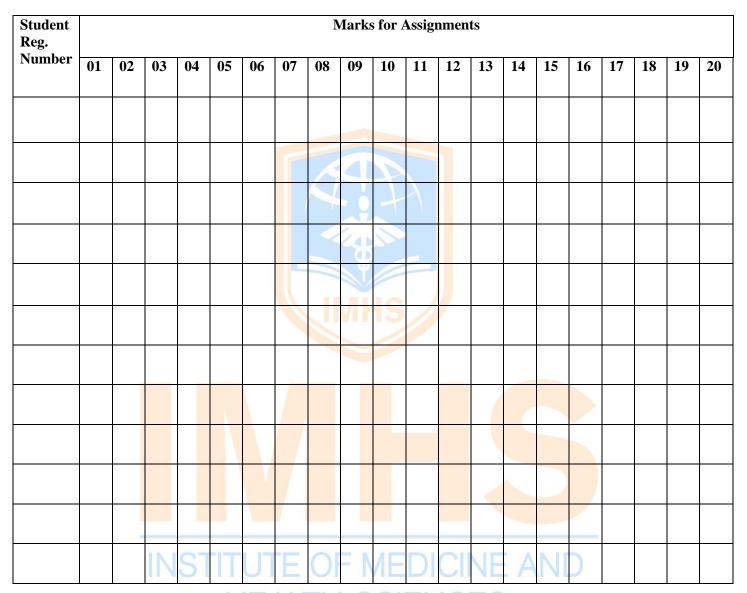
- Senior Lecturer IMHS
- BSc Nursing (Special) SL
- Registered Nurse (Nursing Council, SL)
- Nursing officer (Government)
- 11 Years experiences in the field



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Assignments for Each Module

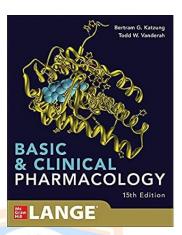


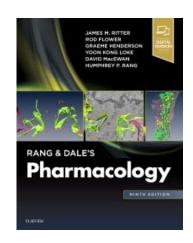
HEALTH SCIENCES

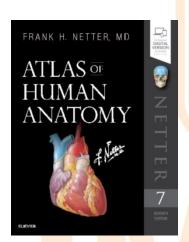
RECOMMENDED BOOKS

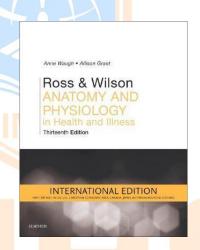
- 1. BRITISH NATIONAL FORMULARY
- 2. BASIC & CLINICAL PHARMACOLOGY BY BERTRAM KATZUNG
- 3. RANG & DALE'S PHARMACOLOGY
- 4. LIPPINCOTT ILLUSTRATED REVIEWS: PHARMACOLOGY (LIPPINCOTT ILLUSTRATED REVIEWS SERIES)
- 5. GOODMAN AND GILMAN MANUAL OF PHARMACOLOGY AND THERAPEUTICS (GOODMAN AND GILMAN'S MANUAL OF PHARMACOLOGY AND THERAPEUTICS)
- 6. ATLAS OF HUMAN ANATOMY, PROFESSIONAL EDITION
- 7. ROSS & WILSON ANATOMY AND PHYSIOLOGY IN HEALTH AND ILLNESS
- 8. GRAY'S ANATOMY FOR STUDENTS
- 9. AULTON'S PHARMACEUTICS
- 10.RAMINGTON ESSENTIALS OF PHARMACEUTICS
- 11.PHARMACEUTICAL MICROBIOLOGY, ESSENTIALS FOR QUALITY ASSURANCE AND QUALITY CONTROL
- 12.WHO GUIDELINES ON GMP
- 13.MHRA GUIDELINES ON GMP

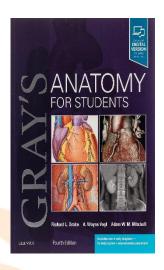


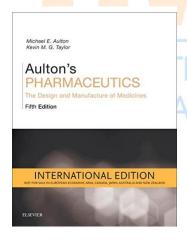


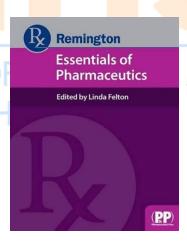


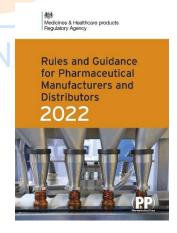














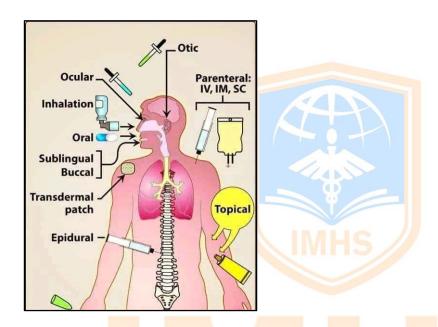






Routes of Administration

Routes of administration are methods for delivering drugs or substances into the body, varying from swallowing pills (oral) to injecting into the bloodstream (intravenous).



Pharmaceutical Dosage Forms

Pharmaceutical dosage forms are the different physical forms in which medications are available, like tablets, capsules, or syrups, tailored for effective administration and patient convenience.



Pharmaceutical Ingredients

Pharmaceutical ingredients are the essential components that make up medications, including the active compounds responsible for their therapeutic effects, as well as any inactive materials used for formulation.



Drug Development & Drug Product Lifecycle

Drug development is the process of discovering and creating new medications, while the drug product lifecycle encompasses a drug's entire journey from development to approval, manufacturing, and market availability.

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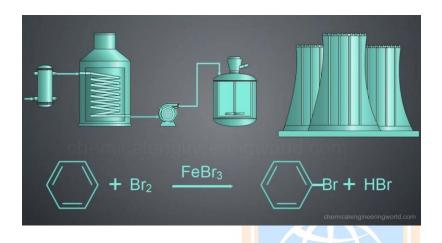
Physical Pharmacy

Physical pharmacy focuses on the physical and chemical properties of drugs and how they relate to pharmaceutical formulation and drug delivery.



Introduction to Unit Operations

Unit operations are core processes in chemical engineering that involve specific physical and chemical transformations, such as mixing, filtration, or distillation, used to convert raw materials into finished products.



Pharmaceutical Analysis

Pharmaceutical analysis is a critical branch of pharmaceutical science that involves the qualitative and quantitative assessment of drugs and pharmaceutical products to ensure their safety, efficacy, and quality.



Solid Dosage Forms

Solid dosage forms are pharmaceutical preparations that come in solid form, such as tablets or capsules, and are designed for oral administration. They provide a convenient and precise way to deliver medications.



Liquid Dosage Forms

Liquid dosage forms in the pharmaceutical industry are drug formulations that are in a liquid state, such as syrups, solutions, or suspensions. These forms are used when patients may have difficulty in swallowing solid forms.





Semi-Solid Dosage Forms

Semi-solid dosage forms are pharmaceutical preparations such as creams and ointments, used for topical application to the skin or mucous membranes for localized drug delivery or skin treatment.



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Sterile Products

"Sterile products" refer to pharmaceutical preparations that are free from living microorganisms, making them suitable for injection, surgical procedures, or other applications where aseptic conditions are crucial to prevent infection.

Special Dosage Forms

Special dosage forms in the pharmaceutical industry are tailored formulations designed for specific patient needs or unique delivery requirements, often outside of traditional solid, liquid, or semi-solid forms.



Packaging Material & Process

Pharmaceutical packaging encompasses the materials and procedures used to securely and safely store and distribute medications, ensuring their quality and integrity.



NMRA Regulations for Manufacturing & GMP

NMRA (National Medicines Regulatory Authority) Regulations for Manufacturing and GMP (Good Manufacturing Practices) are essential quality standards in the Sri Lankan pharmaceutical industry. They ensure that pharmaceutical products are consistently produced and controlled to meet quality standards.



Course Highlights

- Highly Qualified Lecturers
- SLMC Registration
- 300+ Lecture hours
- 20+ Assignments
- Exams (Mid & Final)
- Evaluation report for every Student
- Distance Learning (ONLINE)
- Graduation Ceremony at BMICH
- Diploma Certificate with Transcript





About IMHS

IMHS (Institute of Medicine & Health Sciences) was established in 2019 with the aim of facilitating Professional Healthcare Education for the professionals involved in the healthcare sector, students pursuing their studies in Healthcare & Medicine and the members of the general public who wishes to acquire & enhance their knowledge on health education.

Since the inception, over 3000 students have successfully completed the courses offered by IMHS

IMHS currently offers the below Professional programs for SLMC Registered Apprentice Students.

- Diploma In Pharmaceutical Sciences (SLMC Registration)
- Foundation Course On Pharmaceutical
- Advanced Course In Pharmaceutical Manufacturing
- Advanced Course In Pharmaceutical Law & Regulation
- Advanced Course In Hospital & Community Pharmacy Practices
- Full Revision Course External Pharmacist Examination (SLMC Registration)
- Rapid Revision Course External Pharmacist Examination (SLMC Registration)
- OSPE & VIVA External Pharmacist Examination (SLMC Registration)
- English Course For Healthcare Professionals (Medical English Course)

In addition to the above, our management team is tirelessly working on introducing novel program areas (attached full programs below).

IMHS Vision

To be a globally renowned Healthcare Education Provider.

IMHS Mission:

To impart quality healthcare system and healthcare education and to undertake research and extension with emphasis on application and innovation that cater to the emerging societal needs through all-round development of students of all sections enabling them to be globally competitive and socially responsible citizens with intrinsic value s.



Chairman's / Managing Director's Message

The Pharmaceutical Industry has been evolving in Sri Lanka and around the world, over the years. Technological advancements, process re-engineering, knowledge sharing & up-skilling have resulted in elevating the overall standards of the industry and its stakeholders.

We established IMHS in 2019, in order to facilitate and share up-to-date knowledge on a number of subject areas within the Pharmaceutical industry. The learned, professional panel of lecturers work tirelessly in developing, further improving & delivering quality course content to students across the subject areas of drug action on diseases, medicine legislation, patient counseling and good pharmaceutical manufacturing practices, to name a few.

By completing our courses successfully, you will be empowered with knowledge and skills related to become a professional in the pharmaceutical industry; may it be in a hospital, a retail or wholesale pharmacy, or even in a pharmaceutical manufacturing facility. Our result-driven subject curriculum & teaching methods will equip you with the required skills and knowledge, for career progressions within and beyond the Pharmaceutical Science industries.

R.M Isuru Gayashan Wijesinghe

Senior Lecturer

PhD in Healthcare & Pharmaceutical Sciences, USA
M.Sc in Pharmaceutical Sciences, USA
BPharm (Special) Sri Lanka, LLB (Reading) SL



Director's Message

Our journey at IMHS started with the aim of developing a center of globally known excellence in Pharmaceutical education in Sri Lanka. Toward achieving this dream, we promote high-quality education and training in pharmaceutical science as well as entrepreneurship and innovation that cater to emerging societal needs.

As a Pharmacist with years of knowledge and experience in the industry, I believe proper knowledge of medicine with good ethics makes our community healthier which is very important for the growth of our country. So, we are committed to creating a learning, innovative, scientific, and carefully planned course curriculum for our students. This will help them gain knowledge of Pharmaceutical industry and relevant skills to claim their professional place in healthcare.

So, I invite you to join us to embark on a meaningful and rewarding career where you can play a part to safeguard health by making quality drugs and imparting knowledge on the safe use of medicines.

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M.G.E.J Dharmasiri EALTH SCIENCES

Senior Lecturer

BPharm (Reading), Sri Lanka

Diploma in.Pharmacy, Sri Lanka

Chief Pharmacist - Government Hospital





IMHS SIGNED MOU WITH KIU

DATE: ON 5TH APRIL 2024 AT KIU











077 802 50 50 info.imhsedu@gmail.com



IMHS SIGNED MOU WITH T L CARE CAMPUS PVT LTD

DATE: ON 19TH APRIL 2024

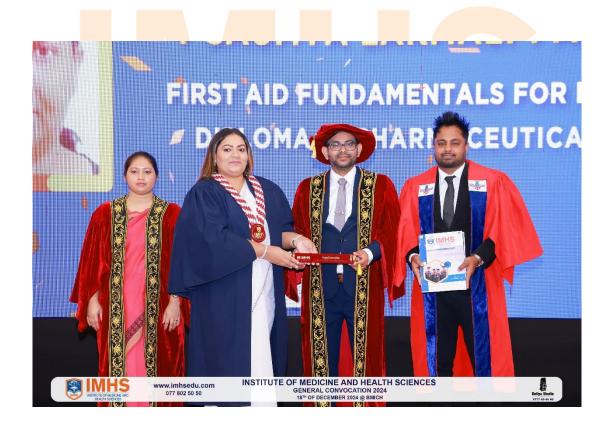




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IMHS Academic Goals

- 1. To offer a healthcare education pathway to healthcare professionals and the general public with the industrial and global requirements, and enhance the healthcare knowledge of the people.
- 2. To identify and introduce new education providing areas and incorporate curriculums and arrange relevant education high standard processes to the global.
- 3. To design and implement an educational system adhering to outcome-based international models
- 4. To introduce and implement innovation in the teaching and learning process to strengthen academic delivery



IMHS Courses:

- Medication Handling and Safety for Caregivers
- Foundation Course on Pharmaceutical Sciences
 - Certificate Course on Pharmacy Practice (Assistant Pharmacist Course)
 - Certificate Course on "Basics of Pharmaceutical Manufacturing"
 - Advanced Courses on Pharmaceutical Manufacturing
 - Advanced Courses on Pharmaceutical Law and Regulation
 - Advanced Courses on Community Pharmacy Practices
 - Diploma in Pharmaceutical Sciences
- Pharmacists' Course for Sri Lanka Medical Council (SLMC) registration
- Revision Courses External Pharmacist Examination (SLMC Registration)
- OSPE & VIVA External Pharmacist Examination (SLMC Registration)
- Higher Diploma in Pharmaceutical Sciences
- International Pharmacy Qualification Examinations (RPL)
- Pharmaceutical Marketing & Scientific Insights
- Professional Product training Courses for medical delegates & managers

- Skill Development for Pharmaceutical Industry Pharmaceutical Manufacturing (Production)
- Skill Development for Pharmaceutical Industry Research & Development
- Skill Development for Pharmaceutical Industry Quality Assurance
- Pharmaceutical Marketing Management, and Scientific Insights
- Professional Certificate in Product Knowledge for Medical Representatives & Managers
- Caregiver courses
- First aid courses
- Occupational Safety & Health Courses
- Physiotherapy courses
- Medical English Course For Healthcare Professionals
- Medical English Course For Medical Students (Beginer, Intermediate, Advanced)

English courses for Medical Students

Wound care management courses

- Healthcare Education Courses for General Public
 - First Aid Fundamentals for Everyone
 - Living Well with Diabetes
 - Healthy Pregnancy and Lactation Essentials (Pregnancy and Location)
 - Living Well with High Blood Pressure & High Blood Cholesterol
 - Living Well with Pain and Arthritis
 - Living Well with Gastro-intestinal & Respiratory Disorders



Educational Objectives of IMHS

This program has been crafted with the following educational objectives:

1. Knowledge Expansion:

• To broaden the understanding of healthcare professionals, colleagues, and the wider community regarding the intricacies of the pharmaceutical industry and the overall healthcare system.

2. Professional Development:

• To cultivate a workforce that is both knowledgeable and competent, thereby enhancing the quality of personnel within the pharmaceutical sector and healthcare infrastructure.

3. Educational Advancement:

• To establish a structured educational route that guides individuals through the complexities of the pharmaceutical landscape and healthcare services.

4. Career Exploration:

• To spotlight the multitude of vocational opportunities available within the pharmaceutical field and healthcare system, thus informing and inspiring the public about potential career paths.

HEALTH SCIENCES

Each goal is aimed at not only enriching participants with knowledge but also at fostering a more efficient, informed, and prepared community of healthcare practitioners and industry professionals.























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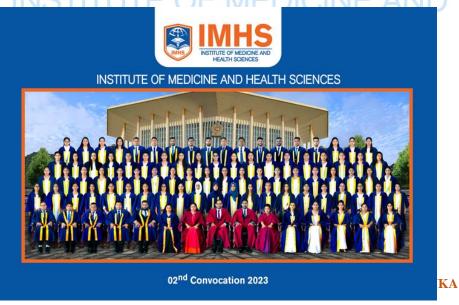


























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