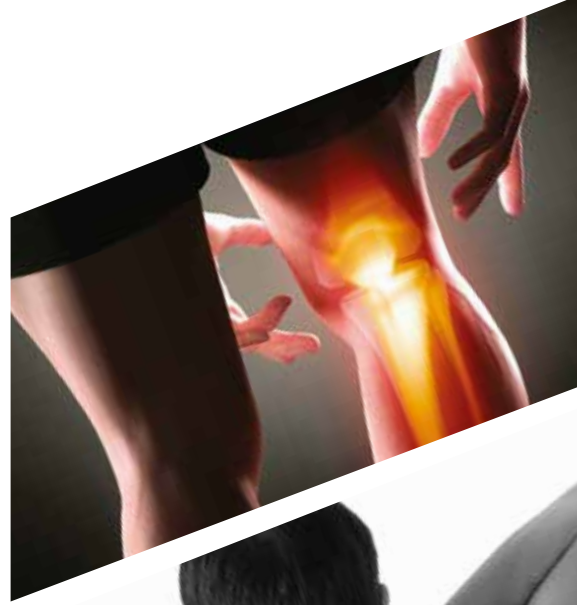




رفاه انٹرنیشنل یونیورسٹی



Brochure

MSC PAIN MEDICINE

MSc Pain Medicine

Title of Degree

- The degree will be called MSc Pain Medicine.
- The minimum period for completion of MSc program shall be 2 years.
- The period of completion of MSc program shall be counted from the date of admission / registration.
- Candidate will have to complete at least 50 credit hours in 2 yrs.
- The examination shall consist of two parts:
 - Theory and Clinical/or Practical examination – viva voce.
 - Thesis , Research Agenda.

Eligibility Criteria

- MBBS or equivalent qualification recognized by PMDC.
- Anaesthesiologist (MCPS / FCPS) or those with 3 years experience in anaesthesiology will be given preference.
- FCPS in other specialties (Medical and Surgical Allied).

Justification

With ever growing needs of patients towards different treatment modalities, pain management is now recognized as a multidisciplinary field. This multidisciplinary common field is shared by pain management specialists, anaesthesiologists, acupuncturists, physiotherapists, surgeons, neurosurgeons, psychiatrists, medical specialists and members from the faculties of basic medical sciences.



Every one contributes towards patient management, employing specialized interventional and non interventional skills. For instance, the anaesthesiologist knows how to apply different loco regional blocks. The neurosurgeon plays his part in various invasive techniques. Physiologist deals with the basic mechanisms of pain.

Naturally, no single individual might know every thing that might be relevant to the broad range of patients with pain. The question arises, what should everyone know? Who deals with pain patients? What core of common knowledge is necessary so that we can best serve the patient and work in collaboration with each other?

We treat more than a thousand pain patients per year in our pain clinic, which is fully equipped with facilities and trained faculty members. Realizing that both life and attention spans are short, our goal has been to develop a reasonable curriculum that is of interest to and helpful for everyone from different fields of medicine. The eligibility for this diploma will be M.B.B.S registered with PMDC. Total duration of training will be 2 years.

Our Program

- Provides graduates with the informed and evidence-based ability and skills to manage pain in a variety of settings
- Is designed to encourage multidisciplinary learning
- Will equip students with the knowledge and skills to manage pain more effectively

Module 1

MSc Pain Medicine

There will be four modules. Summative assessment will be done after each module. Trainee has to pass each:

- Basics of Pain Medicine, Pharmacological and non-pharmacological management
- Musculoskeletal and rheumatologic pain condition
- Nerve blocks and neuroablative procedure
- Education and Scientific Enquiry (Dissertation writing)

Module 1: Basics of Pain Medicine, Pharmacological and non-pharmacological management

Trainee's Aims

Learning Objectives

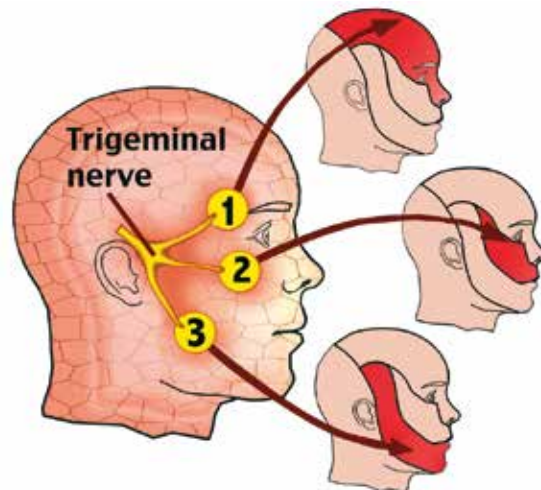
These are what the Trainee needs to learn. They are presented as:

- Knowledge
- Clinical management ("knows how") that applies knowledge and clinical skills to manage the patient
- Skills (clinical and technical)
- Attitudes and behaviours

Knowledge

This Module builds on basics of Pain Medicine, Pharmacological and non-pharmacological management and different conditions. Trainee should have:

- Knowledge of basics of pain medicine,
- Know about and can apply physiological and anatomical aspects of pain management
- Know about neuropathic pain and looks in detail and various common chronic pain conditions including PHN, PDPN, TGN and phantom limb pain.
- Know about pharmacology of pain transmission and modulation, neuropathic pain medicines, including TCA, Duloxetine, Gabapentinoids and topical treatments.
- Addresses pain management in patients suffering from cancer and in cancer survivors



- Knowledge of pain linked to a number of specific conditions and pain in specific populations including:
 - Pain in pregnancy
 - Pain in sickle cell disease
 - Management of pain in individuals suffering from drug
 - Addiction and withdrawal
 - Paediatric pain
 - Pain in older people

Addresses pain management in patients suffering from cancer and in cancer survivors

Neurobiology of Pain

Overview of "Pain Pathways" Multidimensional aspects of pain; role of physiological, psychological and environmental factors

Pharmacology of Analgesic Agents

This includes pharmacokinetic and pharmacodynamic principles, drug interactions, and side effects.

Knowledge of the pharmacology of:

- Opioids
- Paracetamol
- Non-steroidal anti-inflammatory agents (NSAIDs)
- Antidepressants (TCAs and SSRIs)

- Anticonvulsants
- Membrane-stabilizing agents
- Alpha-2 agonists
- NMDA-receptor antagonists
- Local anaesthetics
- Anti-emetics
- Agents used to treat hypotension associated with neuraxial blockade
- Awareness of the role of the following in pain management
- Anti-migraine agent
- Steroidal anti-inflammatory agents
- Topical agents (NSAIDs, Capsaicin)
- Neurolytic agents
- Experimental agents for analgesia
- Knowledge of different routes of analgesic drug delivery, including factors governing choice of route, side effects relevant to particular route, principles of additive and synergistic effects when agents are combined
- Oral
- Intramuscular
- Subcutaneous (including continuous infusion)
- Intravenous (including continuous infusion)
- Patient-controlled analgesia (PCA) via different routes (i.e. intravenous, subcutaneous, intranasal, epidural, intrathecal)
- Neuraxial Other; topical, transdermal, rectal, transmucosal (intranasal, inhalational and sublingual/buccal), intra cerebro ventricular, intra-articular, incisional



Knowledge — Principles of Pain Medicine

History, Philosophy and Medico legal Aspects

- Concepts of pain and suffering Relevance of the subjective nature of pain report to pain assessment
- Relevant ethical principles including professional responsibility (professional power, vulnerable groups), autonomy and dignity, national and regional legislative and ethical issues regarding death, particularly with respect to euthanasia
- National and regional issues relevant to the prescription of controlled substances including the Poisons Act and Regulations
- Informed consent with focus on issues relevant to the patient with pain
- Confidentiality principles, including relevant national and regional legislation
- Principles of evidence-based medicine as they apply to the assessment of pain interventions
- Epidemiological aspects of persistent pain, including social cost

Psychological and Sociocultural Issues

The importance of psychological(emotional and cognitive), social, and other factors in the presentation and management of pain with emphasis on:

- Factors involved in the wide variation in individual response to tissue injury
- The relationship between depression and persistent pain
- The role of anxiety and/or depression in acute pain



- Differentiation of active and passive coping strategies
- The role of illness behavior
- The role of national and regional compensation and other third party issues in the presentation of pain and response to treatment
- The influence of the health care provider on the response to pain treatment
- The importance of an interdisciplinary approach to pain assessment and treatment including the potential role of other members of the pain team (particularly psychiatrist, clinical psychologist, physiotherapist, nursing staff, occupational therapist, social worker)
- The placebo effect and its implications for treatment of pain

Substance Abuse

Concepts of tolerance, physical dependence, addiction and

- Pseudo addiction
- Latrogenicity in tolerance and dependence
- Common licit and illicit drugs of abuse
- The importance of a multidisciplinary approach to pain management in patients with a history of substance abuse (including monitoring, drug therapy, rehabilitation)
- Principles of detection, initial intervention and ongoing treatment of substance abuse in doctors (including awareness of services available for treatment of the impaired doctor)

Clinical Management

Professional Practice

Comply with relevant policies, recommendations, and guidelines for practice of pain by IASP.

Understand the organization of a Multidisciplinary Pain Clinic and an Acute Pain Service, including the role of such services in education (of patients and staff), collaboration, documentation and administration, and the role of protocols and audit.

Pain Assessment and Measurement

Assess pain and outcome of pain treatment using history, clinical examination and pain measurement tools.

Recognize the limitations of pain measurement techniques, particularly in some patient groups (e.g. persistent pain, children, those with cognitive impairment).

Acute Pain

Have an understanding of:

- Neuroendocrine and metabolic responses to surgery and other acute stressors and impact of analgesic techniques
- Consequences of poorly controlled pain
- Current evidence for and against pre-emptive analgesia and clinical implications
- Current evidence for the effect of analgesic technique on morbidity and mortality
- Importance of aggressive multimodal postoperative rehabilitation





- Relationship between acute and persistent pain including factors involved in progression from one to the other, and potential interventions to prevent such progression.

Choose the most appropriate technique of acute pain management:

- Pharmacological techniques (opioid and non-opioid) via a variety of routes
- Regional techniques including central neuraxial, plexus and peripheral nerve blockade
- Non-pharmacological techniques

Formulate a pain management plan based upon:

- Patient preference, physical and mental status, and available expertise and technology
- Special requirements in specific patient groups (e.g. the elderly, children, pregnant and postpartum patients; obstructive sleep apnoea, concurrent hepatic or renal disease; non-English speaking, cognitive impairment)
- Special requirements in patients with opioid-tolerance and/or a substance abuse disorder including an understanding of guidelines and regimens for analgesic drug use (equianalgesic dosing for opioids; tolerance and dependence)
- Special requirements under specific clinical situations (e.g. spinal injuries, burns, acute back pain, musculoskeletal pain, acute medical pain, acute cancer pain and patients in Intensive Care and the Emergency Department)

Include in a pain management plan:

- Appropriate evaluation of the patient's pain
- Informed consent, including disclosure of risk and appropriate documentation
- Patient education about the selected technique and alternatives

- Recognize common presentations of acute musculoskeletal pain (e.g. rib fracture, acute back pain) and other non-surgical acute pain syndromes (migraine, renal colic) including in the Emergency Department and Intensive Care Unit
- Identify when to seek advice from, or refer to, a Pain Medicine Specialist

Cancer Pain

Undertake assessment of pain in patients with cancer based upon:

- Understanding of the multiple potential aetiologies of pain associated with cancer Differentiation between somatic, visceral, and neuropathic pain
- Evaluation of psychological, social, cultural and spiritual issues
- Undertake treatment of cancer related pain syndromes based on therapies available (including chemotherapy, radiotherapy, surgery, invasive and non-invasive analgesic techniques, and psychological approaches)
- Understand guidelines and regimens for analgesic drug use including equianalgesic dosing for opioids; tolerance and dependence and their management in the patient with cancer
- Identify when to seek advice from, or refer to, a Pain Medicine Specialist

Neuropathic Pain

Understand diagnostic criteria, clinical features and management of specific neuropathic pain syndromes including:

- Central pain (pain after stroke, thalamic pain, spinal cord injury pain, deafferentation pain, phantom limb pain)



- Neuralgias (trigeminal neuralgia, postherpetic neuralgia, occipital neuralgia)
- Painful peripheral neuropathy (e.g. metabolic, toxic, ischaemic)
- Pain after nerve injury (e.g. neuroma)
- Post-surgical pain syndromes (e.g. post-thoracotomy, post-CABG pain, post-mastectomy, post amputation)
- Complex regional pain syndrome types I and 2 (including the differentiation of sympathetically maintained from sympathetically independent pain)
- Identify when to seek advice from, or refer to, a Pain Medicine Specialist

Pain in Children

Recognize and understand the ways in which acute and persistent pain in children differ from pain in adults, including:

- The effect of developmental stage on assessment and management of pain in children
- The selection of pain assessment tools for children of different
- Developmental stages– Principles of managing acute, procedural and persistent pain in children

Pain in the Elderly

Understand pain management in the elderly, taking into account:

- The epidemiology of pain syndromes in the elderly
- Physiological changes associated with ageing and effects of these
- On pain and pain management (including changes in pharmacokinetics, pharmacodynamics, and pain biology)



- Effects of concurrent disease, and psychological, social and cognitive changes on assessment and management of pain
- Risks associated with poly pharmacy in the elderly

Skills — Clinical Skills

In this Module, Trainees will provide, or assist with, appropriate pain management in both inpatient and outpatient settings.

Clinical Evaluation

Trainees will demonstrate skills in the clinical evaluation of patients with acute and persistent pain by:

- Obtaining a specific pain history– Onset, location, nature, duration, intensity, aggravating and relieving factors
- Physical, psychological and social consequences of the patient's pain
- Current and past pain treatments and outcome
- Other relevant history (past patterns of drug use or misuse, family history, medical and surgical history)
- Pain beliefs
- Treatment expectations
- Interpreting relevant investigations
- Formulating a management plan and evaluating outcome

Communication Skills

Demonstrate communication skills in dealing with patients in pain, including:

- Dealing with issues of grief and loss
- Undertaking conflict management (e.g., in dealing with angry patients, in dealing with other staff)
- Appropriate use of (non-medical) language in communicating with Patients and their families, including with specific patient groups such as children
- Demonstrate communication skills with other health professionals by Presenting results of patient assessment at multidisciplinary meetings where appropriate
- Undertaking consultation (verbal and/or written) with other medical and paramedical specialists, as indicated by the clinical situation

Module 2

Musculoskeletal and Rheumatological Pain Condition

After completing this course of modules, you should be able to:

- Feel confident in managing a number of common musculoskeletal disorders such as osteoarthritis and acute and chronic back pain.
- Manage patients with osteoporosis, and reduce their risk of sustaining a fracture.
- Manage patients with a number of focal joint disorders, including frozen shoulder, posterior shoulder pain and tennis elbow.
- Avoid missing a diagnosis of polymyalgia rheumatica.
- Feel confident in managing patients with chronic pain. Osteoarthritis: a guide to management in adults - in association with NICE.
- Know the clinical features of osteoarthritis in adults.
- Know how to diagnose a patient with osteoarthritis
- Know how to manage a patient with osteoarthritis.

Acute back pain

- The common causes of acute back pain.
- How to assess patients who present with acute back pain and when to refer them.
- The red flags in patients with back pain.
- The psychosocial factors associated with slow recovery from back pain.
- Conservative management and when to refer for surgery.
- Knowledge of different interventional procedures, their indication, complication and contraindication.
- Chronic back pain: diagnosis and treatment.
- Learn about diagnostic tests for people with chronic back pain.
- Recognise which treatments work and which do not
- Identify which treatments to avoid.
- Understand the significance of psychosocial and occupational factors associated with complaints of low back pain and its chronicity.
- Be aware of the evidence concerning the rationale and efficacy of intradiscal therapies for low back pain.
- Understand the utility and limitations of multidisciplinary therapy for chronic low back pain



- Osteoporosis: fracture prevention and treatment.
- How to best approach this condition, identification of high risk condition.
- How to prevent fractures in at risk groups.
- What treatments are available and how to follow up with patients.

Frozen shoulder (adhesive capsulitis)

- How to diagnose frozen shoulder.
- Who is most at risk of frozen shoulder.
- What the evidence says about treatment.
- Tennis elbow: diagnosis and treatment.
- Diagnose tennis elbow following a focused joint examination.
- Describe the management options available and the evidence base for each of these.
- Be aware of when to consider referral to secondary care.

Polymyalgia rheumatica: diagnosis and management in primary care

- The prevalence of polymyalgia rheumatica (PMR)
- The aetiology of the condition.
- Presenting symptoms and the differential diagnosis.
- Which investigations to request.
- The complications associated with PMR.
- How to treat the condition.
- When to refer to a specialist.

Musculoskeletal pain

- Know anatomy, physiology, neurophysiology and biomechanics of musculoskeletal system
- Know basic facts about mediators of inflammation, tissue destruction and repair
- Know about psychological aspects of musculoskeletal pain /disability
- Will be able to classify musculoskeletal diseases according to clinical characteristics
- Will be able to do assessment of rheumatic disease activity and severity.
- Will be able to treat and rehabilitate musculoskeletal pain/disability

Rheumatologic diseases

- Know describe anatomy, natural history and pathophysiology of rheumatic diseases
- Know how to perform and interpret full history and clinical examination
- Will be able to order and interpret relevant investigations used in rheumatology
- Will be able to diagnose rheumatic diseases
- Will be able to manage rheumatic diseases with medicines and intra-articular injections
- Will be able to educate patient

Rehabilitation process

- Back Pain – Injections
- Intra Articular Injections
- Fluoroscopy and Peripheral Nerve

Stimulator in Regional Anesthesia

- Pharmacology of Local Anesthetics
- Complications of Peripheral Regional Anesthesia
- Fundamentals of Electrical Nerve Stimulation
- Nerve Blocking Techniques
- Peripheral Nerve Block, Chronic Pain
- Brachial Plexus: Anatomy
- Sciatic Nerve Block (Posterior Approach)
- Sciatic Nerve Block (Anterior Approach)
- Sciatic Nerve Block (Lateral Approach)
- Sciatic Nerve Block (Inferior Approach)
- Femoral Nerve Block
- Lateral Cutaneous Nerve of Thigh Block
- Knee/Popliteal Block (Lateral Approach)
- Knee/Popliteal Block (Prone Posterior Approach)
- Knee/Popliteal Block (Supine posterior Approach)
- Intra – articular Knee Block
- Saphenous Nerve Block
- Ankle and Foot Block
- Mid Tarsal Block



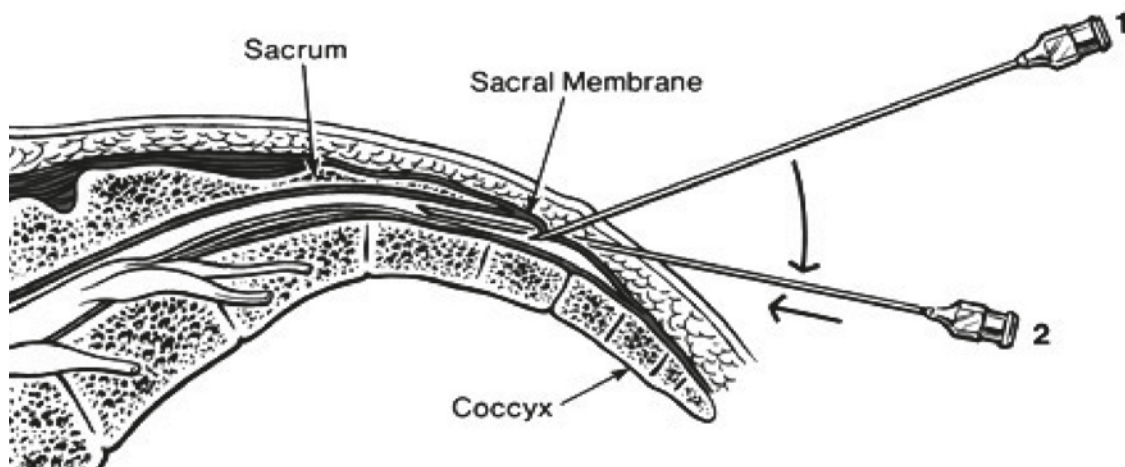
Module 3

Nerve Blocks and Neuroablative Procedure

1. Know the anatomy of critical peripheral and central nervous regions as it relates to analgesics nerve blocks:
 - Spine
 - Peripheral nervous system
 - Autonomic nervous system
2. Be familiar with the general principles of the pharmacology and use of drugs used for nerve blocks.
3. Know the pharmacology of opioids as they relate to regional analgesia.
4. Know commonly used neurolytic agents.
5. Know about the use of locally injected corticosteroids.
6. Know how nerve blocks are used for diagnostic purpose and pain control.
7. Know how to recognize and treat the side effects and complications of nerve blocks.
8. Know how to perform and indications of following blocks:
 - Nerve Blocking Technique
 - Peripheral Nerve Block, Chronic Pain
 - Brachial Plexus: Anatomy
 - Superficial Cervical Plexus Block
 - Deep Cervical Plexus Block
 - Interscalene Block (Winnie's Approach)
 - Interscalene Block (Meier's Approach)



- Subclavian Perivascular Block (SPV)
- Vertical Infraclavicular Block (VIB)
- Subcoracoid Infraclavicular Block
- Suprascapular Nerve Block
- Axillary Block
- Mid humeral Block
- Elbow Block
- Wrist Block
- Thoracic Paravertebral Block
- Intercostal Nerve Block
- Ilioinguinal/Iliohypogastric Nerve Block
- Caudal Epidural –Children
- Lumbar Plexus Block
- Discography





- Intradiscal Electrothermal Annuloplasty
- Nucleoplasty
- Epidural Steroid Injection
- Facet Block
- Sacroiliac Joint Dysfunction
- Radiofrequency (RF) Ablation
- Peripheral Nerve Stimulation (PNS)



- Peripheral and plexus blocks of the upper and lower limb
- Head and neck blocks
- Truncal blocks including intercostal and paravertebral block

Trainees need to understand the anatomy, technique, indications, contraindications, complications and management of (but not necessarily be able to perform):

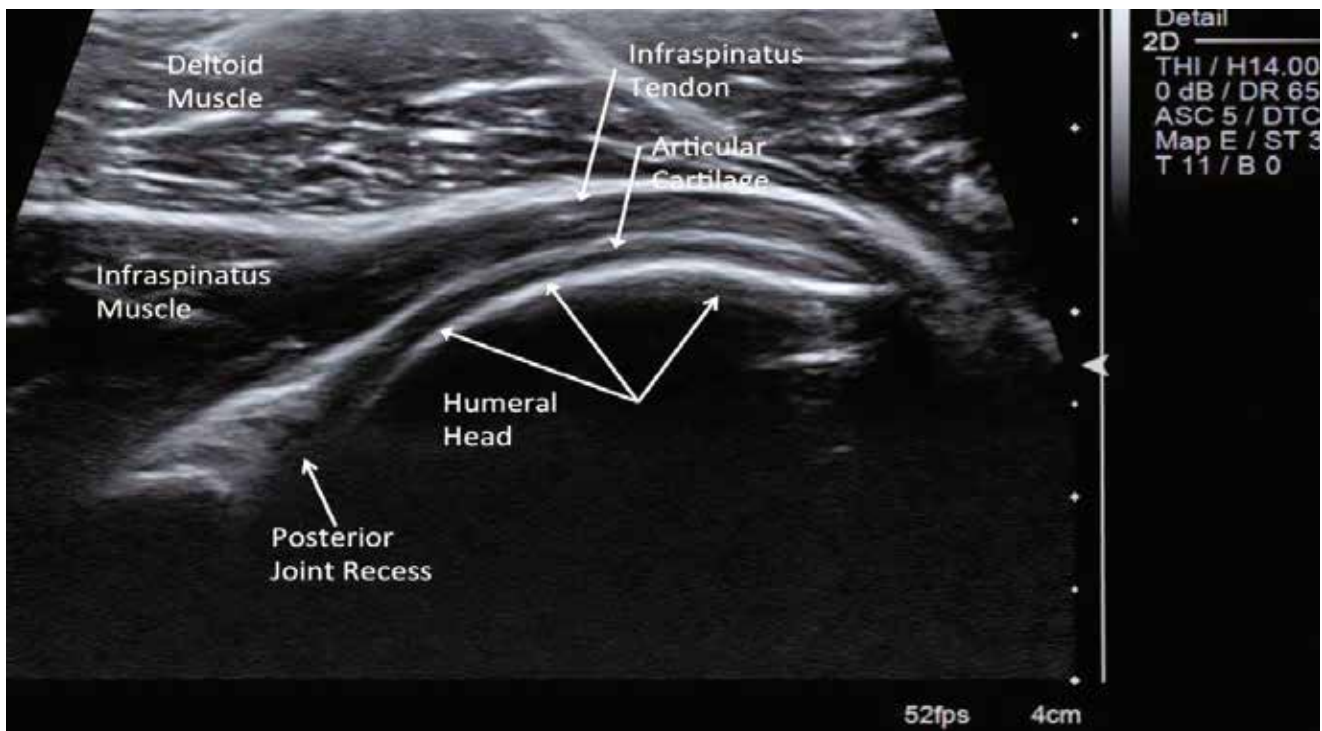
- Stellate ganglion blockade
- Coeliac plexus blockade
- Lumbar sympathetic blockade
- Intrathecal drug delivery for cancer and persistent pain

Technical Skills

Trainees are required to obtain competency in:

- Central neuraxial blocks

Regional techniques (including knowledge of anatomy, technique, indications, contraindications, complications and their management) including:



Module 4

Education and Scientific Enquiry (Dissertation writing)

Trainee's Aims

In this Module, Trainees will learn the scientific approach to problem-solving, and gain experience in searching for information and in analysing, writing, and presenting scientific information.

The aim of Module is for Trainees to acquire a series of abilities in scientific enquiry and in practising evidence-based medicine, and an appreciation for lifelong learning. Trainees will:

- Complete tasks to gain skills in self-directed continuing education and scientific enquiry
- Develop an understanding of evidence-based medicine
- Complete a Formal Project(dissertation) which has a component on evidence-based medicine

Learning Objectives

These are what the Trainee needs to learn. They are presented as:

- Knowledge
- Clinical management (“knows how”) that applies knowledge and clinical skills to manage the patient
- Skills (clinical and technical)
- Attitudes and behaviours

Knowledge

Trainees will understand the scientific approach to analysis and solving questions worthy of scientific investigation. The steps and considerations include:

- Proposing a hypothesis
- Information search and literature review
- Research design, bias and appropriate methods of measurement
- Data collection and storage
- Copyright and intellectual property
- Good record keeping
- Common statistical tests and application of statistics relevant to the project
- Interpretation of results
- Monitoring of studies and post study surveillance.



- Responsibilities of Institutional Review Board/ independent ethics committee
- Responsibilities of investigator to the ethics committee
- Principles of writing a scientific paper
- Principles of oral or poster presentation of a paper.
- Principles of evidence-based medicine
- Ethical principles
- The process of obtaining funding and writing a basic grant application

Skills

Trainees will acquire skills in scientific learning as a medical specialist including:

- Conducting and appraising literature searches.
- Appraising journal articles including the application of statistics
- Applying the principles of evidence-based medicine to clinical practice
- Carrying out oral presentations and professional communication
- Presenting quality assurance exercises or projects.
- Developing facilitation skills, such as tutoring in small-group learning and conducting small-group meetings

Attitudes

Trainees will develop an appreciation of and

commitment to continuing education and scientific enquiry, including:

- Valuing rigorous educational and scientific processes
- Distinguishing between practice with a sound scientific basis and that which requires further objective assessment
- Committing to informed consent, confidentiality and all other ethical principles of research
- Committing to lifelong continuing professional development

Assessment

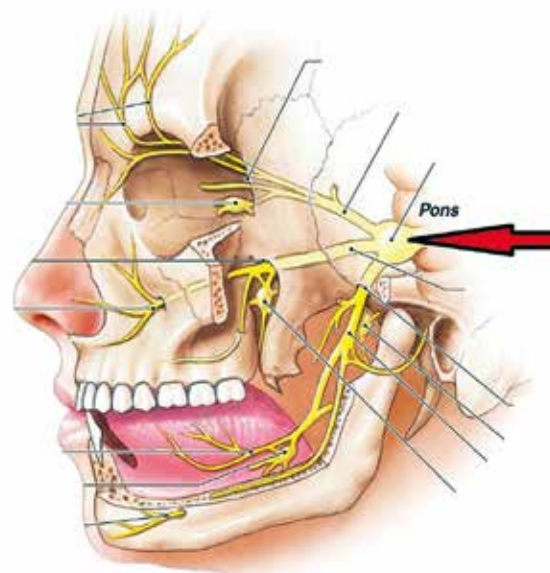
Completion of this Module does not need to be validated by a Module Supervisor. However, Trainees must complete a Formal Project(dissertation).This research proposal will be evaluated and approved by supervisor. Aspects of clinical performance,education skills, and attitudes will be reviewed.

The Log book should show the Trainee's progress through the Module, as records of papers presented or submitted, projects submitted for grants or ethics approval, literature searches and topics reviewed.

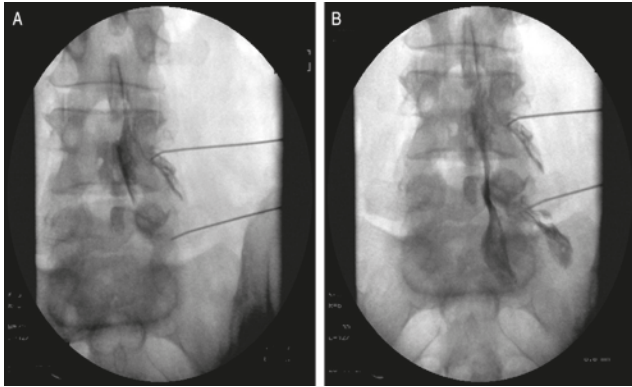
CURRICULUM MSc PAIN MEDICINE

The syllabus of training will comprise following topics:

1. Anatomy and Physiology:
 - Trainee will learn about peripheral and central mechanisms of pain transmission, and pain modulations.
2. Pain measurement:
 - Familiarity with various pain scales



- Ability to apply these various scales to the patients appropriately
3. Psychological aspects of pain:
 - The definition of pain as a somato - psychic experience
 - Distinction between major psychological and behavioral consequences of acute and chronic pain
 4. General principles of pain evaluation and management:
 - Taking detailed history and examination of the patients and their management
 5. Design and devaluation of clinical analgesic trials
 6. Drug treatment:
 - Familiarity with the use, dosage, side effects and drug interactions of various analgesics like opioids, NSAIDS, antiepileptics, anti depressants, corticosteroids and various local anaesthetics
 7. Non-pharmacologic pain management – acupuncture, TENS etc
 8. Physical medicine and rehabilitation:
 - To make trainee aware and vigilant in use of physical methods of treatment like heat and cold, exercise and massage
 - To decide when to suggest appropriate application of orthotics and occupational therapy
 9. Non-surgical application of methods of neuro modulation
 10. Application of surgical approaches towards pain



management:

- Hypophysectomy etc

11. Nerve Blocks:

- Familiarity with the anatomy and relevant physiology of local blocks
- Familiarity with the general principles of pharmacology of various drugs used for nerve blocks
- Familiarity be gained with various diagnostic, prognostic, therapeutic and prophylactic local blocks
- Neurolysis and Neurolytic blocks

12. Psychiatric and Psychological treatment

13. Behavioural interventions

14. Multidisciplinary pain management:

- Knowledge of the range of services that pain clinics provide
- Knowledge of the facilities and equipment required to establish pain clinic

15. Classification of various painful conditions:

- Myofascial pains
- Low backache
- Neuropathic pain
- Headache
- Cancer pain
- Postoperative pain

EVALUATION OF TRAINING AND AWARD OF DIPLOMA

- The trainee will be assessed through out the training period of 2 year. Summative assessment will be done after each module. There will be formative assessment throughout the course by direct personal evaluation of supervisor ,log book

and monthly assessment of procedural skills . Log Books will be completed before final examination. The topic of thesis will be allotted within one month of registration

- The basic and advanced knowledge regarding therapy and practical applications of various treatment modalities will be assessed by regular internal examinations
- Diploma will be awarded at the end of 2 years training, to the trainee who will have satisfactorily carried out their training

RELEVANT LITERATURE AND PRACTICAL AIDS

- A library containing more than 50 different books on the topics of pain is already established
- Latest journals with updated information regarding pain management are regularly subscribed
- Dummies are available for hands- on workshops
- Various nerve locators, nerve stimulators, TENS, infusion pumps and other relevant equipment is already present in our setup for practical application on pain patients
- Full, updated records of all academic activities of individual trainees will be kept in written and maintained regularly
- In essence, the award of diploma will open up ways for more collaborations and effective strategies towards pain management. This will, on one hand, help reduce the suffering and misery of thousands of pain patients per year; and on other hand, set a horizon of joint venture by specialists from diverse fields of medicine, enabling them to understand their patients as well as communicate with each other in a better way

ADMISSION

The application form shall be accompanied by:

1. Six attested recent passport size photographs
2. Attested copy of National Identity Card
3. Attested copy of MBBS or equivalent qualifying examination certificate
4. House job certificate
5. Experience certificate
6. PMDC registration certificate

- The application of the in service candidates should be forwarded by the head of the institute

Where and How to Apply

An application material containing application form, prospectus and the necessary information, can be obtained from following places:

- Admissions Office of the RIU/ Islamic International Medical College (IIMC), advertised from time to time.
- The application form and other related material may also be downloaded from the Website of RIU or IIMC free of cost.

ACADEMIC SYSTEM

Structure and Duration

- The requirements for the Program shall comprise coursework and thesis. The Program requirements of each Department shall comprise coursework requirement of at least 50 credit hours.
- All the candidates shall follow the syllabi and courses prescribed by the RIU from time to time that are obtainable from RIU or PGRTC on payment.

Student Evaluation

A candidate shall be allowed to appear in the examination if he/she has been on the rolls during the semester, has registered himself/ herself for the courses of study with the RIU; and has attended prescribed lectures and laboratory work and completed the coursework to the satisfaction of the Department duly recorded on log book.

Teaching & Methodology

- Teaching of various courses shall be conducted in the University Departments or the affiliated institutions through lectures, tutorials, discussions, seminars, fieldwork and /or other methods of instructions.
- The teaching shall be in accordance with the coursework prescribed by the Dean, PGRTC, IIMC from time to time.
- As part of advanced studies, RIU will rotate the candidate to other training institutes as advised by the supervisor.

Biannual Progress Report

The Supervisor of MSc student shall submit a detailed progress report after every six months for the

consideration of the Advanced Studies and Research Board. In case of two consecutive adverse reports, the Board may cancel the registration of the candidate. The University is authorized to cancel the registration due to poor performance of the candidate at any time of the course.

Thesis / Dissertation

- Each candidate shall submit a thesis dealing with concerned speciality or any of its branches. It shall be submitted to the Controller of Examinations on the date fixed for the purpose.
- The thesis must be type written on paper 11" x 8 1/2" with margin of 1 1/2" at each side. Only one side of the paper is to be typed. It shall be bound in cloth/raxine with the name of the author and title on the side cover.
- A student must register for the thesis by the end of the first semester.
- The candidate is required to attend and present at least two seminars on his/her research work during the course of his/her study.

Course Work / Total Credits For Graduation

The course will comprise four semesters of six months each. There shall be an assessment examination comprising written and viva voce, at the end of each semester. A candidate will be required to complete at least 50 credits before appearing for the final assessment at the end of two years. At least 25 of these credits will be completed in first year. The distribution of credits will be as follows:

S.No	Activity	Credits
1.	Dissertation	8 (eight)
2.	Lectures	1 per 5 lectures
3.	Procedures	1 per 5 procedures
4.	Original research paper published	2 per paper
5.	Case report published	2 per report
6.	Paper Presented in a National Pain Conference	2 per paper
7.	Paper Presented in a Regional Pain Conference	1 per paper
8.	Presentation in a Clinical Meeting	1 per paper
9.	Pain Camps /Workshop	2 Per Camp

The candidate shall get the topic and the protocol approved at any time after three months of start of course. The completed dissertation shall be submitted six months before the final assessment and approval

shall be a prerequisite to appear in the examination.

The candidate is required to keep a log book of all the activities in which he or she participate during the course. The lectures on physiology, pharmacology and anatomy of pain shall be attended in the relevant departments of a recognized medical college and the fact shall be endorsed in the log book authenticated by the lecturer and the head of the respective department. The topics to be covered are listed below. The interventional procedures in pain medicine shall be completed in pain clinics/ centres recognized by the university. The record of these procedures shall be kept in the log book and should be authenticated by the respective supervisors or heads of department. A suggested list of required procedures is given below.:

Lectures (1 Credit Per 5 Lectures)

1. Neurophysiology & Pain Physiology

- a. Nerve and muscle
- b. Nociceptors
- c. Chemical transmitters of pain
- d. Peripheral modulation of pain
- e. Central modulation
- f. Pain pathways
- g. Neuropathic pain
- h. Phantom limb pain
- i. Dorsal horn
- j. Thalamus

2. Pharmacology

- a. General
- b. Local Anaesthetics
- c. NSAIDs
- d. Opioids
- e. Antidepressants
- f. Anticonvulsants

3. Anatomy

- a. Neuroanatomy
- b. Cranial Nerves
- c. Peripheral nerves
- d. Nerve plexus
- e. Sympathetic ganglia and chain
- f. Cranial foramina
- g. Applied anatomy of spine

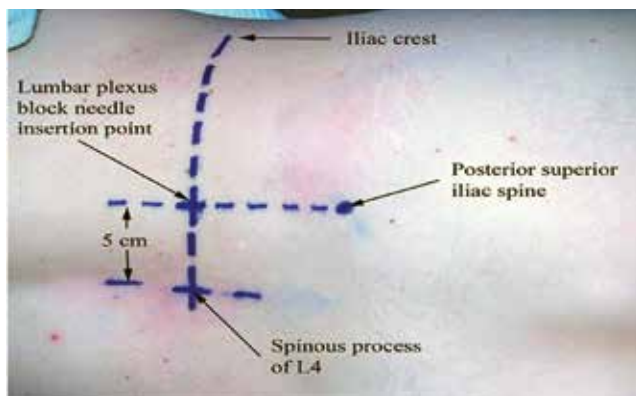
Procedures (1 credit per 5 sessions)

- Lumbar epidurals
- Cervical epidurals
- Thoracic epidurals

- Caudal epidurals
- Nerve blocks
- Plexus blocks
- Epidural implants
- Acupuncture (1 credit per 5 sessions)
- Facet blocks
- Sacroiliac joint block
- Sympathectomy
 - a. Cervical
 - b. Thoracic
 - c. Lumbar
 - d. Coeliac Plexus
- Gasserian ganglion block
- Sphenopalatine ganglion block
- 1Neurolytic blocks
- Any other interventional procedure related to Pain Medicine.

Examination

1. The candidate must submit two copies of the thesis alongwith an application form for the evaluation of his thesis, duly approved by his supervisor and Head of the Department concerned.
2. The Board of Studies will suggest to the Advanced Studies and Research Board two separate panels of external examiners – one for the evaluation of thesis and the other for the viva-voce examination.
3. The Advanced Studies and Research Board will consider and approve the panels of examiners.
4. The Vice-Chancellor shall appoint a panel of 4 examiners (3 external and 1 internal) approved by Dean.
5. The examiner shall report as to whether the thesis be accepted or rejected. The thesis which has been accepted will become the property of Riphah International University. After the thesis is approved the candidate shall be permitted to appear in the examination.
6. The degree shall be awarded on the result of an examination consisting of:
 - i. One written paper.
 - ii. A Viva-Voce covering the entire field of the examination including the thesis.
 - iii. A clinical and/or practical examination in concerned speciality.
 - iv. A high degree of performance will be expected from the candidate in the whole examination in order to get through. The whole examination has to be taken together and cannot be taken in parts.



- v. The viva-voce, clinical and/or practical examination shall be conducted by the four examiners (3 external and 1 internal) appointed by the Vice-Chancellor from the panel approved by Dean.

The degree of MSc under the seal of the Riphah International University shall be awarded to the successful candidate after the reports of the examiners for the thesis, result of the theory & clinical and/or practical examinations and viva-voce examination by the Syndicate on the recommendations of the Advanced Studies and Research Board.

- Passing marks in theory (MCQ'S & SAQ'S) aggregates 60%.
- Passing marks in Oral & Practical aggregates 60%.
- Passing marks in Thesis & Log books aggregates 60%.
- Passing marks in internal assessment 60%.

Candidates has to pass all the four components in final examination

Note:

You have to submit a thesis consisting of the 80-100 pages, format similar to FCPS.

Log books should be completed before 3rd semester & duly signed by supervisor (Please send the Name of your supervisor), and the institute to whom you are affiliated.

Regarding assignment, you have to submit a progress report of your pain management activities. You have to submit minimum 5-10 cases per month as Pain Intervention Procedure:

Test/ Semester Exam would be conducted in May & Nov. each year. Please notify your change of address & contact No if there is any change.

It is advised that you should keep in touch with us.

Suggested Books & Journals for MSC (Pain Medicine) Course

- Pain Medicine-A comprehensive Review by P. Raj.
- International Pain Management – by 2nd ed. Waldman.
- Text Book of Pain 3rd ed by Wall & Malzack.
- Bonica's Management of Pain 3rd ed. By Butler – Chapman – Turk.
- Chronic Pain – (Clinical Pain Management) Jensen, Wilson and Rice.
- The Pain Clinic (Vol 13) Simpson Lipton, Eldon Turk.
- Mims – hand book of Pain management, 2004.
- Bandolier's Little Book of Pain, Oxford University Pres – 2005.
- PAIN, Howard L. Field.
- Palliative Care 4th ed. by Robert Twycross.
- Surgical Clinic of North America vol 79.
- Clinical Management of Pain. M. Salim.
- Acupuncture Treatment and Anaesthesia 5th ed. M. Salim.
- Hand book of critical care and pain management by Robin J. Hamill.
- Management of Cancer by WHO.
- Regional Anaesthesia – Atlas by Brown.
- Peripheral Nerve Blockade by C.A Pinnock.
- Hand Book of Regional Anaesthesia by P. Raj.

Note:

You can get Cd of 40 Pain Medicine books from department of Anaesthesia.

Journal

- PAIN
- Clinical Journal of Pain
- Pain Digest
- Pain Clinic
- Journal of Musculoskeletal Pain
- Journal of Pain and Palliative Pharmacology
- Journal of Pain and Symptom Management

DEPARTMENT OF ANESTHESIA & PAIN MANAGEMENT

Statues

Nomenclature:

Name of the proposed course shall be Fellowship in Interventional Pain Medicine (FIPM).

Training Centers:

Department of Anesthesia and Pain Medicine at IIMCT Pakistan Railway Hospital Rawalpindi.

- Iffat Anwar Medical Complex Lahore.
- Allam Iqbal Medical College Lahore.

Duration of Course: 2 years program

Course Structure:

It is a 2 years program which will be conducted in 8 modules. Each module will be of 3 months with hands-on-workshop at the end of each module.

Mandatory training of 3 months/year at Department of Anesthesia and pain medicine at Riphah International University.

Hands-on training duties in Pain clinic and Acute pain service.

Mandatory rotations in Neuro and Spine, Rehabilitation, Psychiatry and Radiology.

Admission Criteria

For admission in Fellowship the candidate should have:

- MBBS Degree
- Completed one-year house job
- Registration with PMC
- FCPS/MS Anesthesia OR FCPS/ MS Surgery & Allied
- Preference will be given to MSc Pain Medicine candidates

Number of Seats: 20 (50% for Anesthesia candidates 50% for Surgery Allied).

Domicile: All Pakistan & Foreign National can apply.

Registration & Enrolment

- 4-6 trainees will be registered with one supervisor.
- The university will approve supervisors for the program.
- The candidates selected for the course shall be registered with the university as per prescribed registration regulations.

Aim & Objectives of the course

Aim of the FIPM program:

The overall aim of the course is to improve competencies and professional clinical practice of doctors in pain management. To meet these aims the course.

- Conforms to the IASP (International Association for the Study of Pain / a chapter of Pain Management of WHO), WIP (World Institute of Pain) recommendations for core curricula in pain management, offering the knowledge base to support clinical practice.
- Incorporates elements of work-based practice to facilitate skill transfer from the study environment to clinical situations.

Objectives of the FIPM program:

- To advance knowledge of pain medicine through creative research, academics and hands-on-trainings.
- To extend knowledge through innovative educational programs built on strong foundation in which emerging scholars are motivated to realize their highest potential and assume roles of leadership, responsibility, and service to society.
- To apply knowledge to provide solutions to the problems in order to improve the quality of life and enrich the economy of the nation, and the world.
- To practice the specialty of Pain medicine keeping in mind about professional ethics
- To recognize and identify various Pain problems
- To Institute diagnostic therapeutic rehabilitative and preventive measures to provide proper care to the patient.
- To take detailed history, perform full physical examination and make clinical diagnosis.
- To perform relevant investigative and therapeutic procedures.
- To interpret important imaging and laboratory investigations
- To independently perform basic Pain procedures.
- To manage Acute Pain efficiently.
- To demonstrate empathy and human approach towards patient and their families.
- To develop skills as a self-directed learner, recognize continuing educational needs and use appropriate learning resources.
- To teach medical / nursing students' paramedical staff and healthcare Providers.

PAIN PROCEDURES

Procedures degree-i	Procedures Degree-ii
Acupuncture	Epidurography
Acupressure	Epidural Implants
Axillary Block	Facet Blocks
Ankle and Foot Blocks	Glossopharyngeal Nerve Block
Brachial Plexus Block	Intrapleural Analgesia
Deep Cervical Plexus Block	Lumbar Sympathetic Block
Electro Acupuncture	Obturator Nerve Block
Epidural Steroid Injection	Psoas block
Elbow Block	Paravertebral Somatic Block
Femoral Nerve Block	Sacroiliac Joint Injection
Intra Articular Injections	Sacral Plexus Block
Intrascapular Block (Winnie's Approach)	Thoracic Paravertebral Block
Intrascapular Block (Meier's Approach)	
Intercostal Nerve Block	Procedures degree-iii
Ilioinguinal/Iliohipogastric Nerve Block	Chemonucleolysis
Intra Articular Knee Block	Cryo Nucleolysis
Knee/Popliteal Block	Celiac Plexus Block
Lateral Cutaneous Nerve of Thigh Block	Discography
Midhumeral Block	Gasserian Ganglion Block
Occipital Nerve Block	Intradiscal Electrothermal
Penile Block	Nucleoplasty
Peripheral Nerve Stimulation	Percutaneous Cordotomy
Pens	Percutaneous Laser Discectomy
Superficial Nerve Block	Radiofrequency Ablation
Subclavian Pervascular Block (SPV)	Selective Nerve Root Block
Suprascapular Nerve Block	Spinal Cord Stimulation
Subscapular Intraclavicular Block	Sphenopalatine Block
Sciatic Nerve Block	Spinal Endoscopy
TENS	Vertebroplasty
Vertical Intraclavicular Block	
Wrist Block	

Course: Modular Based (8-Modules)

Duration: (18-weeks each).

Credit Hours: 37 Credit Hours

Modules 1 & 2		
MPREM-714	Research Methodology & Evidence Based Medicine	2(2-0)
MPBPP-715	Bio Psychosocial Aspects of Pain	2(2-0)
MPPP-716	Physiology of Pain	3(3-0)
MPPA-717	Pharmacology of Pain	3(3-0)
	Total	10
Modules 3 & 4		
MPAP-718	Acute Pain	3(2-1)
MPCPS-719	Chronic Pain Syndrome	3(2-1)
MPCPP-720	Central Pain, Neuropathic Pain,	3(2-1)
	Total	9
Modules 5 & 6		
MPPR-721	Cancer Pain & Palliative Care	3(2-1)
MPMU-722	Fluoroscopic Anatomy, Musculoskeletal Ultrasound	3(2-1)
MPAP-723	Interventions for Pain Management	2(0-2)
	Total	8
Modules 7 & 8		
MPTP-724	Terminal Project	6(0-6)
MPCR-725	Clinical Residency	4(0-4)
	Total	10
	Grand Total	37

Scheme of the Course

Time Table of First Year

Pain Clinic+Pain Acute Services	Rotations	Workshops
3 months at Department of Anesthesia and pain medicine (RIU) 5 students/3 months	<ul style="list-style-type: none"> 2 Weeks Radiology 2 Weeks Spine Unit (Neurosurgery) 2 Weeks Rehabilitation 	<ul style="list-style-type: none"> Research and methodology Basic life support (BLS) Communication skills

Time Table of Second Year

Pain Clinic+Pain Acute Services	Rotations	Workshops
2nd Cycle of: - 3 months at Department of Anesthesia and pain medicine (RIU). 5 students/3 months	<ul style="list-style-type: none"> 2 Weeks Radiology 2 Weeks Spine Unit (Neurosurgery) 2 Weeks Rehabilitation Psychiatry 	<ul style="list-style-type: none"> Ultrasound guided workshops of pain-relieving procedures Fluoroscopic guided neuraxial blocks

Electives / Rotations

There will be mandatory rotations of 2 weeks/year in following specialties:-

- Neuro and Spine
- Rehabilitative Medicine and Physiotherapy
- Radiology

Methods of Teaching & Learning

- Classrooms
- Modular (workshops/ seminar/master classes)
- Hands-on live procedures, cadavers
- Video conferencing system
- Log book completion under supervision of supervisor.
- Dissertation

Final Examination

1. The candidate must submit two copies of the thesis along with an application form for the evaluation of his thesis, duly approved by his supervisor and Head of the Department concerned.
2. The Board of Studies will suggest to the Advanced Studies and Research Board two separate panels of external examiners – one for the evaluation of thesis and the other for the viva-voce examination.
3. The Advanced Studies and Research Board will consider and approve the panels of examiners.
4. The Vice-Chancellor shall appoint a panel of 4 examiners (3 external and 1 internal) approved by Dean.
5. The examiner shall report as to whether the thesis be accepted or rejected. The thesis which has been accepted will become the property of Riphah International University. After the thesis is approved the candidate shall be permitted to appear in the examination.
6. The degree shall be awarded on the result of an examination consisting of:
 - i. One written paper.
 - ii. A Viva-Voce covering the entire field of the examination including the thesis.
 - iii. A clinical and/or practical examination in concerned specialty. (OSCE, DOPS)
 - iv. A high degree of performance will be expected from the candidate in the whole examination in order to get through. The whole examination has to be taken together and cannot be taken in parts.
 - v. The viva voce, clinical and/or practical examination shall be conducted by the four examiners (3 external and 1 internal) appointed by the Vice-Chancellor from the panel approved by Dean.

The Diploma of FIPM under the seal of Riphah international University shall be awarded to the successful candidate after the reports of the examiners for the thesis, result of the theory & clinical and/or practical examinations and viva-voce examination by the Syndicate on the recommendations of the Advanced Studies and Research Board.

1. Passing marks in theory (MCQ'S & SAQ'S) aggregates 60%.
2. Passing marks in Viva & Practical aggregates 60%.
3. Passing marks in Thesis & Log books aggregates 60%.
4. Passing marks in internal assessment 60%.

Candidates has to Pass all the Four Components in Final Examination

Research

The active research component program must ensure meaningful, supervised research experience with appropriate protected time for each resident while maintaining the essential clinical experience.

Recent productivity by the program faculty and by the residents will be required, including publications in peer reviewed journals. Residents must learn the design and interpretation of research studies, responsible use of informed consent, and research methodology and interpretation of data.

The program must provide instruction in the critical assessment of new therapies and of the surgical literature. Residents should be advised and supervised by qualified staff members in the conduct of research.

Clinical Research

Each resident will participate in at least one clinical research study to become Familiar with:

1. Research design
- 2 Research involving human subjects including informed consent and Operations of the Institutional Review Board and ethics of human experimentation

3. Data collection and data analysis
4. Research ethics and honesty
5. Peer review process

This usually is done during the consultation and outpatient clinic rotations.

Case Studies or Literature Reviews

Candidate has to submit a thesis consisting of the 80-100 pages, format similar to FCPS or get two articles published in HEC/PMC recognized journal before appearing in Final Exam at the end of two years.

Log books should be completed before 8th module & duly signed by supervisor (Please send the Name of your supervisor), and the institute to whom you are affiliated.

Admission Information

Duration: 2 Years
Session Commencement: Sep 2022
Study Level: Post-Graduate

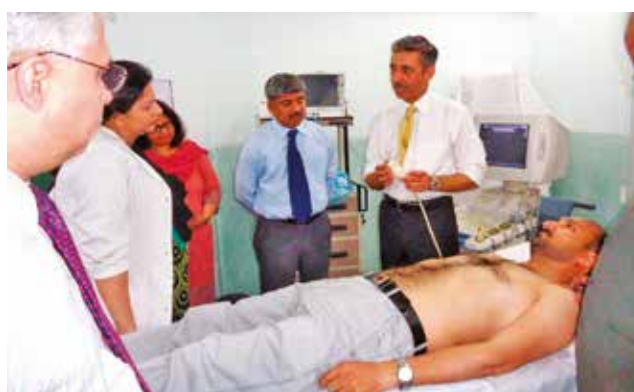
Eligibility:

- MBBS Degree
- Completed one-year house job
- Registration with PMC
- FCPS/MS Anesthesia OR FCPS/ MS Surgery and Allied
- Preference will be given to MSc Pain Medicine candidates

Number of Seats: 20

Apply Before:

Entry Test/Interview: Shortlisted candidates will be called for entry test in July/August



Faculty of Interventional Pain Management

Patron in Chef:

Dr. Anis Ahmed
Vice Chancellor RIU

Course Director:

Brig. (R) Dr. Muhammad Salim
Dean of Faculty

Course Coordinator

Dr. Shehzad Anwar
Prof. Brig. Dr. Shafaq Ahmed

Internal / Visiting Faculty

Dr. Shehzad Anwar

Col (R) Dr. Zahid Rustam

Dr. M. Nazir Awan

Dr. Jamil Sabit

Dr. Salman Salim

Dr. Sajjad Ali Akbar

Prof. Gen (R) Amjad Iqbal

Dr. Brig. Khalil Ahmed

Dr. Gen. Liaqat Ali

Dr. Babur Salim

Dr. Brig. Rahat Shahid

International Faculty

Andrea Trescot (USA)

MD, Diplomate American Board
of Anesthesiology, Diplomate
American Board of Pain Medicine,
FIPP, CIPS

Agnes Stogicza (USA)

MD, DABRM, FIPP, CIPS

Fabrisio D Assis (Brazil)

MD, FIPP, CIPS

Tunç Koc (Turkey)

MD, FRCS, FIPP

Dr. Sudhir Dewan

USA

Dr. Miles Bay

USA

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Al-Mizan IIMCT Complex,
274-Peshawar Road, Rawalpindi.

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Phone: +92 (51) 512 5162-7

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Phone: +92 (51) 844 6000-7

UAN: +92 (51) -111-747-424

G-7 Campus:

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Fax: +92 (51) 289 0690

Gulberg Green Campus:

Plot No PB-02 Gulberg Expressway,
Gulberg Green (IBECHS), Islamabad

Phone: +92 (51) 5912890-5

ETB Campus:

Suite No 7, Ground Floor, Evacuee
Trust Complex, Agha Khan Road,
Sector F-5/1, Islamabad.

Phone: +92 (51) 843 8370-7

Westridge Campus:

Potohar Plaza, main Peshawar Road,
Rawalpindi.

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IIMCT Pakistan Railway Hospital:

Westridge, Rawalpindi.

Phone: +92 (51) 425 9795-8

Fax: +92 (51) 425 9793

Riphah International Hospital:

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Sihala, Islamabad.

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Fax: +92 (51) 289 0690

MaxHealth Hospital:

2-K Markaz Road, G-8 Markaz,
Islamabad

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