

Master of Science (MS) Advanced Clinical Practice Course Descriptions

Year 1

MS ACP 500

Clinical Neurophysiology I

Credits 1

The purpose of this course is to provide health care practitioners with an advanced understanding of clinical neurophysiology in the context of the patient encounter. The course will explore the clinical significance of peripheral nerve fibers, the spinal cord, brainstem and brain and their functional activities in the context of visceral and musculoskeletal disorders. The student will learn to effectively integrate clinical neurophysiology with various physical and biochemical treatment interventions.

MS ACP 510 (DL)

Clinical Neurophysiology II

Credits 1

The purpose of this distance learning course is to provide a deeper understanding of the peripheral and central mechanisms of the sensory nervous system, with a particular emphasis on pain expression. The course will expand upon the nerve fiber and spinal cord anatomy taught in MS ACP 500, by outlining the relationship between altered sensory input and symptom presentation. The student will be able to describe the anatomy and pathophysiology of dysafferentation, and relate these concepts to patient presentations in the clinical setting. In addition, the student will be able to describe the differences and similarities of nociceptive pain, neuropathic pain and psychogenic aspects of pain.

MS ACP 520

Clinical Skills for the Primary Care Physician

Credits 1

The purpose of this course is to present and demonstrate clinical skills including comprehensive history taking and regional physical examination skills in the context of common and complex internal disorders. The student will be enabled to effectively utilize these skills and formulate an accurate differential diagnosis and treatment approach. Interprofessional relationships and integrative, collaborative strategies for management will be emphasized.

MS ACP 530 (DL)

**Clinical Problem Solving for the
Primary Care Physician**

Credits 2

The purpose of this distance learning course is to refine and expand upon clinical problem solving skills with an emphasis on internal medicine. The student will be able to effectively integrate patient history and physical examination findings into an accurate differential diagnosis with consideration of appropriate documentation, diagnostic testing and follow-up.

MS ACP 540

Biostatistics & Research Methodology

Credits 1

This course will introduce the foundational importance of biostatistics and the processes of interpretation and methodical critical analysis of research reports and studies. Emphasis will be placed on preparing students to identify pertinent research findings that may enhance clinical outcomes. Students will be competent in describing the components of a journal article and the general guidelines of critical appraisal for clinical research. They will also be able to identify, define and decipher the validity and or limitations of basic study designs. Various research sources found in on-line search engines and in health sciences libraries will be identified and explored. Appropriate search strategy surrounding a clinical topic and utilization of scientific evidence to build credibility and cultural authority to promote clinical practice will be discussed. The student will be able to recognize ethical issues in clinical research and outline the steps in planning, writing and publishing a case report.

MS ACP 560

Mechanisms of Pain

Credits 1

The purpose of this course is to provide a detailed description of pain mechanisms in a clear, concise and practical manner. Clinical considerations will be outlined regarding options for addressing chronic pain expression. The student will gain an advanced understanding of the anatomy, genetics, biochemistry and physiology of pain in relation to various clinical syndromes. Nutritional biochemistry related to nociception and pain will be incorporated. Implementation of this information into therapeutic programs will be emphasized.

MS ACP 570

Psychological Issues of Illness

Credits 1

The purpose of this course is to present the ways in which psychological issues influence illness. Students will learn to properly probe for psychosocial areas of concern, appreciate those that are impacting health and understand how and when to refer to a mental health professional. The value of proper recognition and the process of appropriate patient communication regarding referral to a mental health care professional will be emphasized. The individual roles of the various mental health care professionals and the current mental health statistics in the United States will be outlined.

MS ACP 580

Clinical Nutrition I

Credits 1

The purpose of this course is to provide a detailed understanding of the altered biochemistry that underlies the expression of most inflammatory related diseases. Current evidence-based nutritional literature will be presented as a foundation for the clinical application of appropriate dietary changes and key nutritional supplements.

MS ACP 590

Clinical Nutrition II

Credits 1

This course is a continuation of the material presented in MS ACP 580. It provides further details regarding the mechanisms of and the scientific evidence for therapeutic agents utilized in inflammatory related disorders. The course will compare and contrast nutritional and pharmaceutical interventions for pain and inflammation management.

MS ACP 600

Clinical Nutrition III

Credits 1

This course is a continuation of the material presented in MS ACP 580 & 590. It outlines how specific factors within the modern diet influence health and disease expression throughout the lifecycle; prenatal, pediatric, adolescent and adult. Implementation of evidence-based dietary changes to help prevent disease expression will be discussed. Emphasis will be placed on the similarity of the underlying pathologic mechanisms of common diagnostically distinct diseases.

MS ACP 610 Advanced Clinical Laboratory Medicine I Credits 1

The purpose of this course is to review common and functional laboratory testing, procedures and appropriate utilization in the primary care setting. Current reference ranges for blood (cells and chemistries), urine, cerebrospinal fluid and other serous fluids will be reviewed. Clinical case assessment and algorithms for various conditions in which abnormal laboratory values occur will be discussed in detail.

MS ACP 640 (DL) Advanced Clinical Laboratory Medicine II Credits 1

The purpose of this distance learning course is to build upon the foundations of laboratory medicine taught in Advanced Clinical Laboratory Medicine I. It will provide an advanced understanding of clinical laboratory medicine through detailed case review and analysis.

MS ACP 620 (DL) Advanced Diagnostic Imaging Credits 2

The purpose of this distance learning course is to review the history of diagnostic imaging, explain the utility and limitations of the various diagnostic imaging modalities, improve interpretation of diagnostic imaging reports, define effective imaging strategies in specific clinical scenarios and approach an imaging study with greater confidence.

The course focuses on the functionality of powerful and sophisticated imaging tools currently available: conventional radiography, computed tomography, magnetic resonance and nuclear imaging. Students will be taken through multiple imaging case studies from start to finish, with emphasis on the thought processes associated with diagnostic imaging interpretation. As these imaging studies are presented, human anatomy, conspicuity of pathology, correlating findings and appropriate clinical action will be emphasized; this includes treatment options, referral decisions and prognostic indicators. The student will be familiarized with the pathological entities that are best demonstrated by each imaging modality. The course will also provide examples of strategies for implementing an effective imaging plan while understanding the need for cost containment.

MS ACP 550 (DL)

Independent Research I

Credits 4

This course builds upon the information taught in MS ACP 540 (Biostatistics & Research Methodology) and is part of the capstone project, which will be continued in Independent Research II. The student will be trained to perform critical appraisals, write succinct critiques and discuss research articles in a scientific manner. This will enable the student to acquire pertinent research articles to develop a case study manuscript. An institutional review board (IRB) application regarding the case study must be approved. The completed case study will then be presented before a research review panel. Submission of the manuscript to a peer reviewed scientific journal will be encouraged.

Year 2

MS ACP 690

Clinical Neurology

Credits 2

The purpose of this course is to provide an advanced understanding of the systematic investigation of common and complex neurological complaints including headache, dizziness, weakness, numbness and ataxia. The fundamentals of neurologic history taking and examination will be emphasized. The components of and rationale for electrodiagnostic testing as well as interpretation of results will be discussed. The student will also gain a sophisticated appreciation for the pathophysiology, symptomatology and management of pain in relation to headache and other neurologic conditions, with the capacity to distinguish serious from benign pain syndromes.

MS ACP 660

Clinical Pharmacology I

Credits 1

The purpose of this course is to review common pharmacologic agents utilized in the primary care setting, related to various clinical topics. Discussion will include an overview of various clinical topics and related pharmacologic agents, classification, mechanism of action and appropriate utilization, controlled substance scheduling and common drug reactions and interactions. There will be discussion regarding adult immunizations, the current recommendation schedule and proposed risks and benefits.

MS ACP 670

Clinical Pharmacology II

Credits 1

The purpose of this course is to review common pharmacologic agents utilized in the primary care setting, related to various clinical topics. It will build upon the information presented in Clinical Pharmacology I. Discussion will include an overview of various clinical topics and related pharmacologic agents, classification, mechanism of action, appropriate utilization and common drug reactions and interactions.

MS ACP 680 (DL)

Clinical Pharmacology III

Credits 2

The purpose of this distance learning course is to review common pharmacologic agents utilized in the primary care setting, related to various clinical topics. It will build upon the information presented in Clinical Pharmacology I & II. Course material will include an overview of various clinical topics and related pharmacologic agents, classification, mechanism of action, appropriate utilization and common drug reactions and interactions.

MS ACP 650 (DL) Integrative & Functional Medicine Credits 1

This distance learning course offers an overview of integrative and functional medicine. Discussion will emphasize a paradigm shift from a traditional disease-centered approach to a more patient-centered focus with appropriate integrative, collaborative management. Effective methods for application of this model in various clinical scenarios will be discussed.

MS ACP 710 Pediatrics Credits 1

This course offers an overview of common pediatric disorders and effective methods for approaching evaluation and management of the pediatric patient. Well infant and child examinations will also be discussed and demonstrated. Students will gain an understanding of normal growth and development and discuss scheduled vaccinations and their associated risks and benefits.

MS ACP 720 Women's & Men's Health/Geriatrics Credits 1

This course illustrates common and complex conditions impacting the health of women and men, including the geriatric population. Pathophysiology, differential diagnosis and effective integrative treatment strategies will be discussed.

MS ACP 730 Clinical Competencies Credits 2

Simulated patient encounters will be utilized to advance, assess and refine the student's clinical skills. The student will be performing comprehensive histories and focused physical examinations on a variety of patients presenting with common and complex complaints regularly seen in a primary care office. The student will be expected to obtain and document pertinent clinical information from a comprehensive history and focused examination, maintain professional patient communication, identify possible red flags and establish an appropriate differential diagnosis with applicable diagnostic plan.

MS ACP 740

Ethics & Risk Management

Credits 1

This course outlines current ethical standards as well as medical and small business liability. Ways in which to identify and minimize possible risks associated with health care practices will be presented.

MS ACP 630 (DL)

Independent Research II

Credits 5

This course, as a continuation of the capstone project, reinforces exploration in critical appraisal of published research and discussion of journal articles in a scientific manner. Students will be expected to choose a topic of interest from previously presented material, which corresponds with a selected clinical case and acquire relevant research through the use of on-line database literature search. The student will work with one of the program faculty, as a content expert, to write a case study for publication. The student will be responsible for drafting and submitting an institutional review board application and manuscript for publication. This will culminate in a capstone case defense to be presented to a research review panel.