

Master of Science (MS)

Advanced Clinical Practice

Course Descriptions

Year 1

MSACP 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.

MSACP 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 MSACP 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.

MSACP 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 examinations skills in the context of common and complex internal disorders. The student will be enabled to effectively integrate these skills and formulate an accurate differential diagnosis and integrative treatment approach.

MSACP 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 diagnostic testing.

MSACP 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.

MSACP 550 (DL)

Independent Research I

Credits 4

This distance learning course builds upon the information taught in MSACP 540 allowing for practical application of the student's knowledge. 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.

MSACP 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, including, but not limited to, back pain, head pain, fibromyalgia and related visceral manifestations. 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.

MSACP 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.

MSACP 580

**Clinical Nutrition I – Inflammation Mechanisms
& Dietary Prescription**

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.

MSACP 590

**Clinical Nutrition II – Biochemical Mechanisms
of Dietary Supplements**

Credits 1

This course is a continuation of the material presented in MSACP 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.

MSACP 600 Clinical Nutrition III – Nutrition throughout the Lifecycle & Expression of Disease Credits 1

This course is a continuation of the material presented in MSACP 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.

MSACP 610 Advanced Clinical Laboratory Medicine I Credits 1

The purpose of this course is to provide an advanced understanding of common laboratory tests and their appropriate use. Current reference ranges for blood (cells and chemistries), urine, cerebrospinal fluid and other serous fluids will be reviewed. Clinical algorithms of diseases in which abnormal laboratory values occur will be discussed in detail.

MSACP 620 (DL) Advanced Diagnostic Imaging I Credits 1

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. Spine related complaints and disorders will be the focus. 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.

Year 2

MSACP 630 (DL)

Independent Research II

Credits 5

This course continues exploration in critical appraisal of published research, discussion of journal articles in a scientific manner as well as search and selection of relevant research on clinical topics through the use of on-line databases and interlibrary loans. Students will be expected to choose a topic of interest from previously presented material which corresponds with a selected clinical case. The student will work with one of the program instructors, as a content expert, to write a case study for publication. The student will be responsible for conducting the appropriate literature search, draft and submit an institutional review board application and manuscript for publication. The capstone case defense will be presented to a research review panel.

MSACP 640

Advanced Clinical Laboratory Medicine II

Credits 1

The purpose of this 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 in the context of the patient encounter as it relates to integrative and functional medicine.

MSACP 650 (DL)

Integrative Clinical Evaluation & Management

Credits 1

Currently being updated.

MSACP 660

Clinical Pharmacology I

Credits 1

The purpose of this course is to provide an understanding of common pharmacologic agents utilized in the treatment of infectious disease. An overview of pharmacologic classification, risks and benefits associated with usage and common drug-drug and drug-herb/supplement interactions will be the focus. There will be discussion regarding adult immunizations, the current recommendation schedule and proposed risks and benefits.

MSACP 670

Clinical Pharmacology II

Credits 1

The purpose of this course is to provide an understanding of common pharmacologic agents utilized in the treatment of cardiovascular disease and pain management. It will build upon the information presented in Pharmacology I. An overview of pharmacologic classification, risks and benefits associated with usage including common drug-drug interactions will be provided.

MSACP 680 (DL)

Clinical Pharmacology III

Credits 2

The purpose of this course is to provide an understanding of common pharmacologic agents utilized in the treatment of diabetes. It will build upon the information presented in Pharmacology I and II. A detailed discussion regarding the current classifications of diabetes, their respective management strategies and associated conditions and complications will be presented. An overview of pharmacologic classification, risks and benefits associated with usage including common drug-drug interactions will be provided.

MSACP 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.

MSACP 700

Advanced Diagnostic Imaging II

Credits 1

The course builds upon the information presented in Advanced Diagnostic Imaging I, and focuses on extremity related complaints and disorders. The course focuses on conventional radiography and advanced diagnostic imaging studies.

MSACP 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.

MSACP 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 and allopathic treatment strategies will be discussed.

MSACP 730

Clinical Competencies

Credits 1

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 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.

MSACP 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. Integration strategies for health care communities and the importance of interprofessional relationships will be emphasized.