



Universidad Central del Caribe Doctor of Chiropractic Program

AY 1

Foundation of Sciences (HMX101)

This online course is focused on bringing the student the core concepts in medicine through clinical applications so the learner can be prepared for the highly demanding curriculum of the Doctor of Chiropractic Program.

Using videos and real patient interactions the student will realize the relevance of basic concepts in the healthcare of patients. The course is offered online using trending strategies in medical education. This course includes the topics of Biochemistry, Genetics, Immunology, and Physiology.

The student will be evaluated by participation in forums and periodical assessment with feedback. The certification of achievement is required to pass the course.

Biochemistry and Cell Biology (BCB101)

The Biochemistry and Cell Biology for Chiropractic Students course integrates the five disciplines of biochemistry, molecular genetics, genetics, molecular cell biology and molecular nutrition and presents the essential concepts of each. The course is conducted over ten weeks in the fall semester of the first year of chiropractic studies and is divided into three units. The course features 112 scheduled student contact hours of conferences. In these classes, the course professors present essential concepts and include clinical correlations chosen to illustrate these concepts. The presenting professors are encouraged to promote student interaction so that these conferences are not overly didactic.

The course includes 13 computer-based self-instruction modules (SIMs) which present essential material that cannot be discussed in conferences due to time constraints. The course also features 10 active-learning sessions. Six of these are clinical application exercises (CAEs) which are clinical case-based small group discussion sessions that apply and reinforce concepts that are learned either in the conferences or in the SIMs. Three of the active learning sessions are post-examination discussions designed to help the student consolidate the learned material. Student knowledge is evaluated with three unit examinations and a comprehensive final examination.

Human Gross and Developmental Anatomy (ANAT101)

This course will survey the regional, functional and developmental anatomy of the human body with emphasis on the anatomical correlates of clinical medicine. The study and visualization of the different components of the human body will be accomplished through prosections and complete dissection of a human cadaver. Teaching strategies used in this course are Lectures, Group Discussions, and Clinical Correlations, Medical Imaging Studies, Human Body Dissections, VH Dissector Pro Computer Program and 3D multiview anatomy system.



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Assessment strategic includes three Written Examinations (have a value of 48% of the final grade), three Laboratory Examinations (have a value of 32% of the final grade), and a Final Exam (has a value of 20% of the final grade).

Principles of Chiropractic I: History, Philosophy, and Theory (CHX 101)

This course will introduce the student to the historical background, the philosophy of its foundation and the theories of the vertebral subluxation complex (VSC). The course will follow a chronological succession of the events following the invention by DD Palmer of the concept known as chiropractic and the follow-up progression to legitimize it. A historical overview of the profession will be taught to ensure that the student understands the myths, prejudice, and future of our young profession. The course will also cover in detail the philosophical view, which has distinguished us from the allopathic community, and how has it been challenged lately. An overview will be given of the challenges that we have as health providers, the socioeconomic impact of our profession in Puerto Rico and its background history, from the pioneers to the present, and how has it developed in the last decades. The VSC will be discussed from a philosophical, research and medical standpoint to create a cognitive and critical interpretation, for the student to follow in his/her career. Assessment and evaluation strategies of this course include MCQ Exams, Oral Presentations, and Written Homework.

Principles of Chiropractic II: Psychomotor Skills, Palpation and Motion Palpation (CHX102)

This course is a comprehensive discussion of the basis for evaluation of joint dysfunction identifying relevant and defensible concepts for the role that the musculoskeletal system plays in health and disease. It takes a critical look at the chiropractic adjustable lesion historically labeled as vertebral subluxation complex (VSC) and commonly referred to as joint dysfunction, offering definitions and theoretical models that have supportive evidence. It describes the various evaluative procedures used to identify the presence of joint dysfunctions. This course serves as an introduction to collective play analysis, emphasizing on the static and motion palpation system and the development of the psychomotor skills required delivering a successful adjustment. The course is taught in a practicum and hands-on workshop, in which the student must perform maneuvers, verbalized procedure and demonstrate competence of motor skills. A rubric criterion-based rating scale will be utilized to assess the student's accomplishments and identify areas for improvement. Assessment and evaluation strategies for this course include MCQ Exams, Performance Evaluations, Clinical Performance Ratings, Practical Examinations and Workshops (FSTT).

Principles of Chiropractic III: Thoracic Spinal Manipulation Technique (CHX103)

This course will serve as an introduction to the art, science and evidence-based spinal manipulation. It will be a practicum application of the biomechanical concepts of spinal joint dysfunction (subluxation), palpation and psychomotor skills through spinal manipulative



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procedures. The course will focus on demonstrating the physiological characteristics and biomechanical functions of the thoracic spinal region and its associated structures. Complemented by various chiropractic techniques (e.g., Full Spine, Diversified) applicable for the correction and rehabilitation of this part. In addition, the course will teach the student the chiropractic biomechanical nomenclature listings, the contact points of delivering the thrust, ergonomics of doctor-patient positioning, professional, communicative terminology and technical skills.

A specific educational resource (Force Sensing Table Technology) will be utilized for teaching purposes allowing the faculty instructor to be quantitative and qualitative assess the student, enhancing, therefore, the skills development and the learning experience. Use of this instrument has been proven in research to produce highly skilled prospects and validate the standardization of the chiropractic adjustment. Assessment and evaluation strategies for this course include MCQ Exams, a criterion-based rating scale will be utilized to assess the student's accomplishments and identify areas of improvement, FSTT Performance quantitative values, Clinical Performance Ratings, Practical Examinations, O.S.C.E. and Workshops.

Diagnostic Imaging I: Normal Anatomy (DIM101)

This course will be taught together with “*Basic Anatomy*” to maximize the student’s anatomic knowledge and is designed to delineate the normal radiographic anatomy of the human body. Lectures will include the topics of congenital anomalies and normal skeletal variants. The student will be proficient in normal anatomy to differentiate normal radiographic findings from abnormal radiographic findings in future diagnostic imaging courses. The course will discuss the history and development of x-ray, x-ray physics, ionizing radiation, basic physical science, x-ray machine and generator, units of radiation, etc. Assessment and evaluation strategies will include Quizzes, MCQ Exams, and Self-Assessment.

Bioethics and Humanities I (ETH101)

The first year of the Bioethics and Humanities course is devoted to the fundamental issues of Bioethics: Principles of Bioethics, Moral Reasoning, and Doctor/Patient relationship, including integrity, confidentiality, informed consent, and decisional capacity. The contents of this course, along with the materials of the second-year course (bioethical issues concerning the beginning and end of life), constitute the indispensable foundations for the application of bioethical principles in the rotations that will begin on the third year.

The Bioethics content is complemented and supported by activities and workshops on Medical Humanities. In this course, students will participate in Action Writing and Medical Narrative workshops led by the Medical Humanities staff. The educational activities include the discussion of a film, using a primary method for the analysis of narratives primarily designed for our chiropractic students, and exercises in creative writing and role-playing. These activities will promote in our chiropractic students’ lifelong skills such as awareness, concentration, observation, trust, teamwork, empathy, communication, critical thinking, moral reasoning, and imagination. In this program, the student begins his/her chiropractic education with this course. It is not by accident. In this way, we seek to underline the importance of the material covered in the overall training (in contrast to instruction) of the chiropractic student, the future primary care



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physician. Assessment and evaluation strategies for this course consist of Departmental Exams, 2 Quizzes, Group Discussions and Role Playing.

Histology (HIS101)

This course has been designed to provide fundamental instruction in basic body organization in such a manner as to not only limit the course to a description of the human body from the microscopic point of view but also give its functional correlation. The primary concern in teaching a functional Histology course is to develop in the student a sense of inquiry, understanding and an appreciation of the structural organization at the cellular level of the human organism as it correlates to normal function and health.

The Histology course meets the educational mission/curriculum requirements of the Universidad Central del Caribe by offering a solid background in modern molecular and cellular biology, tissue, organ systems and clinical correlations, which are the basis for the pathology course and the biological understanding of medicine. The student will learn to recognize and describe normal histology specimens as well as how to analyze, synthesize and organize information using high-level thinking.

The Histology course encourages attendance to correlated clinical lectures, case discussion sessions, and textbook independent study, in addition to library research. Students will be evaluated through MCQ Exams and Formative Quizzes.

Introduction to Clinical Skills (ICS101)

The Introduction to Clinical Skills Course will focus on preparing the student to perform an organized, thorough physical examination, history, and case presentation. The student will learn to select elements of the complete examination for application in problem-specific situations. Topics will be arranged on a systems basis and will parallel systems covered in the Human Gross and Developmental Anatomy Course. It is vital for the student to understand the relationship between material presented in this course and that included in parallel courses. Material presented in one area should be recognized as complementary to and not apart from that shown in other areas.

Educational strategies used in this course are lectures and laboratories. This course will be graded as pass or fail, and the students will be evaluated using the following strategies: departmental exams, conferences and laboratories attendance and Objective Structured Clinical Examination (OSCE).

Neurosciences (NEU101)

Neuroscience is a multidisciplinary course integrating the areas of Anatomy, Biochemistry, Physiology, Pharmacology, Neurology, Neuroradiology, Neurosurgery and Neuropathology. These areas have been experiencing a revolution due to the conceptual and technological improvements of cellular and molecular biology, imaging of the live brain, and other



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advancements. These new approaches, together with classical ones, have allowed us to develop a more comprehensive view of the overall complex interaction of the peripheral and central nervous tissue. In the development of the topics, the students will discuss information ranging from the basic ultrastructural level to establishing neurophysiological and cellular correlates of behavior.

The order of presentation of the topics is intended to provide the student with the morphological information required to understand the physiological and pathological processes related to the nervous system. The clinical correlation sessions, presented by neurologists and neuroradiologists, will serve that goal. In the end, the student will also be introduced to a new avenue of Neuroscience delineated by the development of non-invasive approaches and instruments for the in vivo study and analysis of brain tissue. These are some examples: Magnetic Resonance Imaging (MRI); Computer Assisted Tomography (CT); Proton Emission Tomography (PET) scans, Electro-encephalogram (EEG) Polysomnograms, EMG and Evoked Potentials.

The Neuroscience Course Goals are reached through diverse educational strategies such as Lectures, Laboratories, and Small and Large Group Discussions. Evaluation is based on Partial and Practical Computer-Based examination using the LXR testing program. Besides, written and oral quizzes sometimes including "Clickers," are incorporated both as formative as well as summative strategies.

Problem Based Learning I (PBL101)

The class will be divided into groups of 6-8 students, and a format of small group discussion will be followed. There will also be a facilitator, who is a member of the faculty. Sequential simulations of patient's problems will be presented. Three sessions will be spent on each simulation. The students will take responsibility for the discussion of the issue, identifying what they need to know to understand better and manage the problem, and determining what resources they will use to acquire new information. Each student will be responsible for looking up some part of the needed information and will prepare a report on it. This report will be presented to the rest of the group in the next session.

Self-study skills, as well as the evaluation of the levels of evidence from the information gathered, will be promoted with this course. Students are encouraged to look for information from a variety of sources such as Learning Resources Center (books, journals, Internet sites, etc.), Clinical Skills Center (models, videos), private and government agencies, as well as faculty members (as experts on a given matter). Students will be assessed through Formative and Summative Evaluation Checklists, Narrative Evaluations, Group Portfolio and an Oral Presentation.

Public Health & Wellness (PHW101)

This course is designed to give the chiropractic student a sound educational foundation in the issues of public health topics. Some topics included are a historical perspective of public health, the purpose of public health organizations, structure and functions, social and behavioral factors affecting public health, injuries as a community health problem, safety and health in the workplace, environmental factors in disease transmission and inhibition of disease and



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epidemiology. It will also present the basic concepts of wellness applied to public health. The educational strategy of this course consists of lectures focused on the topics previously mentioned. Student assessment and evaluation strategies will include MCQ Exams, Oral Presentation, and a Community Awareness Project.

Physiology (PHY101)

The Physiology course will present the current biological, chemical and physical concepts underlying the normal function of organ systems. The objectives will be attained using lectures, clinical correlations, and group discussions. The topics to be presented during the lectures will include the physiology of muscle tissues and that about the process of hemostasis and the cardiovascular, respiratory, renal, gastrointestinal, endocrine and reproductive systems. A short review of basic concepts of cellular physiology and the foundations of acid/base disorders will also be discussed. The course will also include small group discussion sessions in which a stronger student-faculty interaction will be established. These activities are designed to help the students understand the material presented in the course, clarify doubts, increase their interest for further knowledge and help them integrate the concepts and principles of physiology to other basic sciences. Students will be evaluated through the following assessment strategies: seven Partial Examinations, Summative Quizzes, and a Subject Final Exam.

Introduction to Research (RES101)

The Research I course is a fifteen-hour course designed to provide first-year chiropractic students with basic principles of clinical and translational research. The course topics include how a study is conducted, evaluated, explained to participants, and applied to patient care. Students are expected to discuss ethical and legal issues of research as well. Lectures by invited faculty and other teaching strategies are used in the course. The course is graded as pass or fails; it is evaluated with a quiz, discussion forums, and a concept mapping presentation.

Translational Research (RES 102)

This course is an introduction to the process of clinical research, defined broadly as patient-oriented, translational, epidemiologic, comparative effectiveness, behavioral, outcomes, or health services research (i.e., any study that has individual human beings or groups of human beings as its unit of observation). It is as well a comprehensive introduction to the clinical trial designs and analysis and protection of human subjects in research and privacy of information (HIPAA). Lectures by invited faculty and other teaching strategies are used in the course. The course is graded as pass or fails; it is evaluated with a quiz, discussion forums, MCQ Exams, Narrative Assessment, and a concept mapping presentation.



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Advanced Anatomy (ANAT202)

This course will focus on the functional anatomy of the vertebral column, vertebrae, joints, ligaments, relevant neurovascular structures and the spinal cord as well as the biomechanics of the vertebral column. Students will also learn about osteology, joint articulations, and biomechanics of the upper and lower extremities. Emphasis will be placed on clinical considerations and its integration with chiropractic. The professor will present/discuss the musculoskeletal anatomy and basic biomechanical principles necessary to understand and apply chiropractic manipulative procedures. As well as the effects of loads on all forms of connective tissue and the relationship between forces applied to the body and the consequences of those forces on human motion. An academic picture of the applied anatomy and clinical biomechanics of the musculoskeletal system should present a nonmathematical approach to defining clinically useful biomechanical concepts necessary to describe and interpret changes in joint function.

Assessment and evaluation strategies used in this course are Lectures, Group Discussions, and Clinical Correlations, Medical Imaging Studies, Human Body Dissections, VH Dissector Pro Computer Program, 3 Written Examinations, 3 Laboratory Examinations, and a Final Exam.

Behavioral Medicine (BEM201)

As implied by the course name, the course will provide the student the necessary knowledge and clinical skills to perform a complete psychiatric evaluation, including mental status exam, and to identify the primary pathological manifestations of mental health, and initiate standard-of-care somatic and psychological treatments.

The course will feature experienced faculty specialized in the conditions and therapies to be covered, using as reference the course's primary textbook, Kaplan & Sadock's, Synopsis of Psychiatry, 10th edition, and the NBME Behavioral Science Review Series. We will also organize the course sections and chapters, as well as study the most recent principal diagnostic changes, to by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Each faculty member will utilize the necessary teaching strategies to promote the acquisition of the stated course goals and objectives. These are the available methods: lectures, textbook and handouts (readings), vignettes (case discussions), role-playing (simulated experiences), PRS questions and answers (problem solving and practice exam questions), and discussion board, deemed most appropriate.

The student will be evaluated using four (4) quizzes, two (2) partial departmental exams, and one (1) final exam consisting of the National Board of Medical Examiners' Behavioral Science Subject Exam.



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Chiropractic Preceptorship I (CCA201)

This course is multidisciplinary and exposes the students to innovative learning and service methods. The students will learn and apply the core concepts of a Primary Chiropractor using three different approaches:

1. Lectures. Students will be exposed to the basic ideas of a Chiropractor, Public Health and Social issues that are related to clinical conditions.
2. Preceptorship. Students will learn by experience the role of a primary care Chiropractor and the community factors that impact health and delivery of healthcare. Students will learn by literature review and practice how to communicate successfully with a diverse group of people; to work in a multidisciplinary team, and to understand different Health Care Delivery Systems.
3. Community Intervention. We will introduce students to the field of Urban and Community Chiropractor. Our students will develop knowledge, professional skills, and strategies in health promotion, disease prevention, and public health issues, to modify unhealthy lifestyles that affect performance and the relation with the community.

Assessment and evaluation strategies consist of Preceptorship Evaluations (Criterion-based rating scales), Case Presentations, Portfolio, Written Presentation, and Community Interventions.

Chiropractic Preceptorship II (CCA202)

This course is multidisciplinary and exposes the students to innovative learning and service methods. We use lectures and case presentations as learning strategies.

The case presentations will be organized in a manner that the topics correlate precisely with the ones discussed in the year courses. It serves as an integration activity of the different concepts related to the presented themes in these presentations.

In this course, the student will be exposed to several clinical experiences throughout the academic year. It will be organized as experiences obtained in cases presentations, community interventions as well as through the longitudinal experience in the preceptorship. In this activity, the student will have as a guide a list of medical topics that correlate with the most common conditions seen in the primary clinical scenario. The student will be assigned to Family Medicine, Internal Medicine, Pediatrics, and Ob-Gyn Preceptorships and the chiropractic counterparts of the allopathic route. The student will participate in hospital ground rounds in conjunction with medical students to integrate the educational experience, as well as, observational role at the clinic of a faculty clinician. The chiropractic faculty preceptors will be chosen and align with a diversity of specialties to enhance the preceptorship experience. Assessment and evaluation strategies consist of Preceptorship Evaluations (Criterion-based rating scales), Case Presentations, Portfolio, Written Presentation, and Community Interventions.



Clinical Diagnosis I (CDI201)

The emphasis of this course is to provide students with a rational, efficient, practice-based/systems-based learning, and a thorough approach to history and physical examination. Topics are arranged as systems-based with parallel systems covered in other concurrent courses. Structured observation using real and standardized patients are used for formative as well as summative evaluations. An Objective Structured Clinical Examination (OSCE) is given as a final practical exam. With this goal in mind, we invite the student to approach with enthusiasm this course, because the history and physical examination are the building block of clinical medicine.

Principles of Chiropractic IV: Spinal Manipulation Lumbar and Lumbo-Pelvic Region (CHX204)

It will be a practicum application of the biomechanical concepts of spinal joint dysfunction (subluxation), palpation and psychomotor skills through spinal manipulative procedures. The course will focus on demonstrating the physiological characteristics and biomechanical functions of the Lumbar and Lumbar-Pelvic spinal region and its associated structures. The course will cover various chiropractic techniques (e.g., Full Spine, Diversified) applicable for the correction and rehabilitation of this part. In addition, the course will teach the student the chiropractic biomechanical nomenclature listings, the contact points of delivering the thrust, ergonomics of doctor-patient positioning, professional, communicative terminology and technical skills. A specific educational resource, (Force Sensing Table Technology) will be utilized for teaching purposes allowing the faculty instructor to be quantitative and qualitative assess the student, enhancing, therefore, the feedback and academic experience. Use of this instrument has been proven in research to produce highly skilled prospects and validates the standardization of the manipulative procedure. Assessment and evaluation strategies for this course include MCQ Exams, Clinical Performance Ratings, FSTT Performance, Practical Examinations, O.S.C.E. and Workshops.

Principles of Chiropractic V: Spinal Manipulation Upper and Lower Extremities Region (CHX205)

This course is designed to provide the study of the upper and lower extremity function that is not produced by the action of voluntary muscles. It will emphasize on the identification and management of global proprioceptive deficits and advanced techniques of extremity adjusting, as an adjunct to spinal manipulative procedures. The course will discuss the interrelationship of the upper and lower extremities and the spine from a biomechanical and neurological point of view. It is a practicum application of the biomechanical concepts of spinal joint dysfunction, palpation and psychomotor skills through spinal manipulative procedures. The course will focus on demonstrating the physiological characteristics and biomechanical functions of the upper and lower extremities and extra spinal region and its associated structures and complemented by the various chiropractic techniques applicable for the correction and rehabilitation of this area.



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In addition, the course will teach the student the chiropractic biomechanical nomenclature listings, the contact points of delivering the thrust, ergonomics of doctor-patient positioning, professional, communicative terminology and technical skills. A specific educational resource (Force Sensing Table Technology) will be utilized for teaching purposes allowing the faculty instructor to perform quantitative and qualitative assessments of the student, enhancing, therefore, the feedback and academic experience. Use of this instrument has been proven in research to produce highly skilled prospects and validates the standardization of the manipulative procedure. Assessment and evaluation strategies for this course include MCQ Exams, Performance Rubric Evaluations, FSTT Performance, Practical Examinations, O.S.C.E. and Workshops.

Principles of Chiropractic VI: Occiput, Cervical, CT, and TMJ (CHX206)

It is an advanced practicum application of the biomechanical concepts of spinal joint dysfunction (subluxation), palpation and psychomotor skills through spinal manipulative procedures. The course will focus on demonstrating the physiological characteristics and biomechanical functions of the cervical spine, occiput and temporomandibular joint region and its associated structures, and complemented by various chiropractic techniques (e.g., Full Spine, Diversified) applicable for the correction and rehabilitation of this area. Also, the course will teach the student the chiropractic biomechanical nomenclature listings, the contact points of delivering the thrust, ergonomics of doctor-patient positioning, professional, communicative terminology and technical skills.

A specific educational resource (Force Sensing Table Technology) will be utilized for teaching purposes allowing the faculty instructor to perform quantitative and qualitative assessments to the student, enhancing, therefore, the feedback and academic experience. Use of this instrument has been proven in research to produce highly skilled prospects and validates the standardization of the manipulative procedure. Assessment and evaluation strategies for this course include MCQ Exams, FSTT Performance, Practical Examinations, O.S.C.E. and Workshops.

Diagnostic Imaging II: Spine, Pelvis, and Extremities (DIM202)

This course is designed to delineate radiographic abnormalities with a focus on the spine, pelvis, and extremities. Lecture topics will include congenital anomalies, scoliosis, arthritic disorders, spinal neuropathic arthritis, spinal and extra-spinal degenerative arthritis, DISH, skeletal tumors, avascular necrosis and Paget's disease. It will emphasize commonly encountered conditions as well as those with disastrous consequences if failed to identify the corresponding condition. This course will also discuss case management and follow-up imaging concepts. The student will develop the skills to formulate a diagnosis supported by the information gathered from the history, physical examination and diagnostic studies as well as determining the need for emergency care, referral and collaborative care. This course will also include laboratory sessions where x-ray positioning of the spine and extremities will be taught in a simulator laboratory. Assessment and evaluation strategies will consist of Quizzes, MCQ Exams, Practical Examinations of X-Ray Positioning and Self-Assessment.



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Bioethics and Humanities II (ETH102)

The second year of the Bioethics and Humanities course is devoted to the beginning and the end of life. The contents of this course, along with the materials of the first-year curriculum, constitute the indispensable foundations for the application of bioethical principles in the rotations that will begin in the third year.

The following topics are presented and discussed during the second year of Bioethics and Medical Humanities: a) bioethical issues concerning the beginning and the end of life; b) bioethical matters concerning the treatment of fetus, newborns, infants, and children; c) bioethical issues concerning end of life care; d) bioethical issues concerning euthanasia and assisted suicide. During the academic year, the presentation and discussion of these bioethical matters will be complemented with the analysis of the movie *Mar Adentro* (The Sea Inside) and role-playing exercises. Assessment and evaluation strategies for this course consist of Written Exams, Summative Quizzes, Group Discussions and Humanities Workshop.

Microbiology and Immunology (MIM201)

Microbiology and Immunology is a full academic year course in pathogenic Microbiology and Immunology designed to provide the necessary concepts required for all subsequent pre-clinical and clinical studies dealing with infectious diseases. This course includes many etiological agents responsible for global infectious diseases. Since the territory covered by infections and the immune response expands each year, we focus on pathogenic mechanisms to foster students' ability to solve problems in their future clinical career.

Repeatedly throughout the course, the Faculty makes appropriate correlations between fundamental principles of medical microbiology and infectious processes, although the emphasis is placed on the understanding of fundamental principles needed now as a student and in the future as a practicing primary care physician. Moreover, it is the Department's responsibility to acquaint the student with enough information that enables him/her to follow the scientific advances in the medicine and medical related sciences.

The course is divided into medical immunology, virology, cell and molecular microbiology, bacteriology, mycology, and parasitology. Teaching/ learning methods/strategies used to enable the achievement of learning outcomes are lectures, laboratory practices, small/large group discussions and clinical correlations. Assessment methods, which would allow students to demonstrate the learning outcomes, are surveys in Blackboard, Patient-Oriented Problem Solving (POPS) and quizzes, among others.

Infectious Diseases

This course integrates microbiology, infectious diseases, and antimicrobial pharmacology. Content covers pathogenic microorganisms (bacteria, viruses, fungi, and parasites), host-pathogen interactions, microbial virulence determinants, host immune responses, signs and symptoms of disease presentation, epidemiology, laboratory diagnosis, prevention (vaccines) and therapy (antimicrobials). An essential component of the course is the relationship between substance abuse and the impact on infectious diseases (e.g., HIV/AIDS, STD, hepatitis, tuberculosis, endocarditis, and skin infections).



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Problem Based Learning II (PBL202)

In this course, the students will be exposed to patient simulations in a problem-based, student-centered and evidence-based approach. This educational methodology will help students develop more responsibility for their learning since it is the students who determine what they need to learn to better understand the patient's problems better. The content of the simulations will be based on the topics covered in the Second-Year courses (Pathology/ Mechanism of Disease, LPCP, Microbiology, Psychopathology, Behavioral Sciences, and Clinical Skills) as well as content from the First-Year courses (Anatomy, Neuroscience, Physiology). The simulations are designed to promote the integration of knowledge from clinical and basic sciences disciplines.

The class will be divided into groups of eight to nine students, and a format of small group discussion will be followed. There will also be a facilitator, who is a member of the faculty. Sequential simulations of patient's problems will be presented. Three sessions will be spent on each simulation. The students will take responsibility for the discussion of the issue, identifying what they need to know to understand better and manage the problem, and determining what resources they will use to acquire new information. Each student will be responsible for looking up some part of the needed information and will prepare a report on it. This report will be presented to the rest of the group in the next session.

Self-study skills are promoted with this course, and students are encouraged to look for information from a variety of sources. Among those, there are Learning Resources Center (books, journals, practice guidelines, Internet sites, etc.), Clinical Skills Center (models, videos), private and government agencies, as well as faculty members (as experts on a given matter). The course will incorporate the concepts of PICO questions as well as the searching of empirical evidence from peer-reviewed sources.

Pharmacology (PHA201)

This course encompasses the presentation and discussion of the chemistry and activity of drugs, pharmacokinetics and pharmaco-genetic principles, pharmacological effects, mechanisms of actions, clinical uses, adverse side effects, toxicities and interactions of medications used in the diagnosis, prevention, and treatment of disease. As far as it is possible, it also emphasizes the physiological and pharmacological effects of both endogenous and exogenous substances at the cellular level. The course involves the discussion and presentation of such topics as general pharmacological principles, pharmacological aspects of drugs affecting the autonomic and the central nervous system, the cardiovascular, respiratory, renal, gastrointestinal and the endocrine systems. It also includes the discussion and presentation of the agents used in the treatment of infectious diseases such as antibiotics, antiviral and antifungal drugs, anti-helminitics and antimalarials. Cancer chemotherapy, principles of immune-pharmacology and the study of the autacoids are also presented in detail. Finally, a section in Clinical Toxicology is also shown, where the essential aspects of environmental, industrial, agricultural and household toxic agents are discussed. Student assessment strategies for this course will include MCQ Exams and Summative Quizzes.



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Lifestyle Diseases and Risk Reduction (PHW202)

This course examines the etiology and development of significant lifestyle diseases such as cardiovascular diseases, cancer, obesity, nutritional disorders, and selected infectious diseases. Lectures will emphasize on identifying risk factors and examination of successful risk-reduction programs. The educational strategy utilized in this course consists of lectures and group discussions. This course will also discuss Lifestyle Medicine, which is the evidence-based therapeutic approach to prevent, treat and reverse lifestyle-related chronic diseases. As well as comprehensive lifestyle interventions (including nutrition, physical activity, stress management, sleep, social support and environmental exposures) address underlying disease risks, thereby decreasing illness burden and improving clinical outcomes within value-based medicine. The students will be evaluated through the following strategies: MCQ Exams, Written and Oral Presentation and a Final Project/Portfolio.

Pathology and Mechanisms of Disease (PMD201)

This course presents all aspects of the development of disease, with particular reference to the causes and their development, as well as the structural and functional changes in cells and organs that result from the disease process. It is offered longitudinally throughout the academic year. It consists of lectures, as well as discussion, large and small groups, case-based learning, independent learning, team-based learning, and tutorials. The grading methodology will include integrated partial institutionally developed, computer-based exams, summative quizzes, participation, self-assessment, and final exam (NBST).

This course has as the prerequisite of the first-year curriculum of doctor of chiropractic, computer literacy, and the basics of evidence-based (research, appraisal of validity and reliability of information, and fundamentals of statistical analysis of such data).

Research in Complementary and Alternative Healthcare (RES 203)

This course will discuss and critically analyze Complementary and Alternative Medicine (CAM) from various perspectives: historical, philosophical, scientific, and clinical, and will allow the student to be familiar with a large number of research areas related to CAM. Educational strategies utilized in this course consist of lectures, small and large group discussions, workshops, case-based learning and independent learning. Students will be evaluated through the following strategies: MCQ Exams, Quizzes, Written and Oral Presentation, and a Research Proposal. As part of the final evaluation of this course, students will develop a research paper/proposal with a topic related to chiropractic.



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Chiropractic Clinic (CCA302)

This course will serve as a practicum for students to implement several techniques learned during the previous courses. Students will use the model of peer assessment and will take advantage of the feedback provided by their peers. The student must show the clinical competency of medical history taking, evaluation, treatment, clinical reasoning and proper documentation of encounters. These duties will be evaluated, overseen and measured quantitatively and qualitatively by the faculty clinician. A rubric criterion-based rating scale will be utilized to assess the student's accomplishments and identify areas for improvement.

A clinical supervisor will oversee the students, provide observations checklists and progress reports as means of evaluation. This course will be a practicum application of the biomechanical concepts of spinal joint dysfunction, palpation and psychomotor skills through spinal manipulative procedures.

Principles of Chiropractic VII: Physiotherapy and Exercise in Chiropractic Rehabilitation (CHX307)

To complement the educational proficiency of the DC student, the active and passive chiropractic care course will introduce the protocols, management, and fundamentals of physical rehabilitation and prevention in a hands-on practical setting. This course design will give the student the skills and critical thought process of preparing a tailored exercise and physiotherapeutic program according to their patients' particular goals and neuromusculoskeletal health status. A course objective is to develop the clinical experience of the student to integrate different techniques of stretching, core strengthening, and balance programs; instrument assisted soft tissue techniques, active and passive ranges of motion, myofascial trigger point release techniques and related matters.

Moreover, this course will also engage the student in acquiring critical clinicians' applications of innovative, evidence-based therapeutic modalities to modulate pain levels and speed recovery times quantitatively. Students will learn about the benefits and contraindications of specific modalities applied during passive care protocols such as angular spinal decompression, electrical stimulation, ultrasound, phototherapy laser therapy, pulsed electromagnetic fields, hyperbaric oxygen therapy, vibro-therapy, Kinesio-taping, biphasic electrical stimulation, Russian stimulation, microcurrent, paraffin, cryotherapy, and athletic taping.

The set of skills learned in this course will complement the set of tools that the clinician will be able to apply to a comprehensive patient treatment plan. Assessment and evaluation strategies for this course include MCQ Exams, Written and Oral Presentations, Performance Clinical Performance Ratings, Practical Examinations, O.S.C.E. and Workshops.



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Pediatrics and OBGYN (CCA303)

The Pediatric and Gynecology clerkship experience introduces the chiropractic student to a unique, sophisticated and challenging field of medicine. In chiropractic, the pregnant woman and pediatric patient are covered by a combination of medical specialties: Pediatrics and OBGYN. This clerkship provides the student with a mix of patient and clinical experiences both in outpatient and inpatient settings. The students will be divided into two groups: group A will go the first two weeks in pediatrics, and the remaining 2 in OBG; group B will alternate the schedule. Half of the day will happen in a clinical site for inpatient experience with allopathic attending physicians and the other half of the day in an outpatient clinic with a chiropractic with a fellow on PED/OBG. The students are evaluated using the following strategies: oral presentations, clinical case presentations, O.S.C.E., departmental examinations, patient encounter, one exam and the daily performance evaluation given by the preceptor and the National Board Subject Examination.

Pediatric component emphasizes those aspects of general pediatrics essential for the chiropractic students and will provide a foundation for those students who elect to further study the health care of infants, children, and adolescents. Students will have the opportunity to participate in the clinical activities of general pediatric services, with emphasis placed on essential general pediatrics, common illnesses and professional, ethical and cultural issues. The clerkship has the responsibility to teach the knowledge, skills, and attitudes fundamental to the development of a competent general physician/chiropractic. Educational strategies developed in this course are lectures, morning reports, teaching rounds and rotations. The students will be evaluated using the following strategies: clinical skills, and departmental exams. The primary learning site for students to developing knowledge, skills, and attitudes are at the Puerto Rico Children's Hospital and San Jorge Children's Hospital.

OBGYN component: Student will be exposed to obstetrical and gynecological experiences under supervision. The class is divided into small groups assigned to the gynecology service, the ordinary and complicated obstetrics service, the labor room and emergency service, and outpatient clinics. At these stations, they will rotate for three (3) days with the responsibility to shadow the process of admission of patient, history and physical examination, daily rounds, follow up of patients, post operative care and discharge summary. At these stations, the daily work will be supervised by full-time instructors. The student should read and be familiar with material related to their cases, and be able to present and discuss their cases in daily rounds as well as with the assigned attending. The primary learning sites are San Juan City Hospital, HIMA, and chiropractic offices. The primary learning sites for students for developing knowledge, skills, and attitudes are at the Puerto Rico Children's Hospital and the Ramon Ruiz Arnau University Hospital.

Family Medicine (CCA304)

This six-week clerkship gives the third-year chiropractic students an opportunity to practice under the supervision of a Family Physician in outpatient settings mostly located in the metropolitan area or adjacent towns in Puerto Rico. Many sites were identified and evaluated, but the chosen ones were carefully selected because they have outstanding family physicians that offer a broad and high-quality experience in family practice. The primary emphasis is on



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acquiring knowledge and skills in assessing and managing common health problems (listed below) among both adults and children. The students provide continuous care for families, emphasizing prevention, patient education, and health promotion. During this experience, the student is exposed to the primary procedures performed in primary care. Close attention is given to the clinical skills to assure consistency in meeting the educational objectives of the clerkship. Every preceptor has a copy of the syllabus, which contains the clerkship objectives and evaluation forms (Clinical Tool Kit).

The educational strategies developed in this course are lectures, daily case presentations, clinical discussions, ethics group case-discussion and home visits. The students are evaluated using the following strategies: oral presentations, clinical case presentations, O.S.C.E., departmental examinations, patient encounter, one exam and the daily performance evaluation given by the preceptor and the National Board Subject Examination. All student work-up is supervised, discussed and countersigned by the attending physician. The patient logbook is evaluated at mid-rotation to identify the diagnoses to which the students need to be exposed order to guarantee the clerkship requirements were accomplished. Written feedback is obtained from the students about the various clinical sites and the preceptors. Each student must work-up four to five new patients and follow twenty patients per week.

Neurology (CCA305)

This Clerkship/Course will expose 3rd-year chiropractic students to the diagnosis and treatments of diverse neurological conditions that are commonly encountered in practice. The student must show proficiency in proposing a chiropractic intervention if feasible or the correct pathway of care according to the evidence in research. It comprises several Educational Workshops, such as the following: Clinical Conferences, Ambulatory Rotations, Recaps and Reviews Sessions, and Competences. We will also be evaluating the performance of each of the different teams in which this Neurology clerkship will be divided. The Global Group Grade will be assigned a ten-percent of the total course/clerkship grade. Each team will be complying with those tasks assigned during the four-week duration of this course. Participation of every team member will be taken into account in the Global Group Grade.

Physical Medicine and Rehabilitation (CCA 306)

This course offers hands-on exposure to the practice of physical medicine and rehabilitation (PMR) with an emphasis on musculoskeletal and neurological rehabilitation. Patients may have an acute illness, trauma, surgical procedures, and hospitalization, and the student will have an opportunity to follow the patients' post-acute care. The primary responsibility is the care of these patients with spinal cord injury, stroke, amputations/complex fractures, multiple trauma, traumatic brain injury, and general debilitation. The faculty will define participation in patient care. The student will be expected to [1] Participate in the evaluation, functional diagnosis, and treatment of individuals with significant impairment and disability who require long-term hospitalization to achieve maximal independence, and [2] Integrate medical and surgical knowledge in the care of patients in the hospital for rehabilitation and the outpatient clinic. Additionally, adult and pediatric outpatient clinics are available to expose students to the long-term problems that these patients encounter.



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The students are evaluated using the following strategies: oral presentations, clinical case presentations, OSCE, departmental examinations, patient encounter, one exam and the daily performance evaluation given by the preceptor and the National Board Subject Examination. All student work-up is supervised, discussed and countersigned by the attending physician. The patient logbook is evaluated at mid-rotation to identify the diagnoses to which the students need to be exposed to guarantee the clerkship requirements were accomplished. Written feedback is obtained from the students about the various clinical sites and the preceptors.

Spine Surgery (CCA 307)

This course will expose 3rd-year chiropractic students to observational roles of surgical interventions of the spine and the standard guidelines of rehabilitation for post-operative care. Students will shadow orthopedic surgeons and neurosurgeons who are actively engaged in the practice of spinal surgery. Students will participate in patient care based on their level of competency and at the discretion of their surgeon attending.

The students are evaluated using the following strategies: oral presentations, clinical case presentations, O.S.C.E., departmental examinations, patient encounter, one exam and the daily performance evaluation given by the preceptor and the National Board Subject Examination. All student work-up is supervised, discussed and countersigned by the attending physician. The patient logbook is evaluated at mid-rotation to identify the diagnoses to which the students need to be exposed order to guarantee the clerkship requirements were accomplished. Written feedback is obtained from the students about the various clinical sites and the preceptors.

Clinical Diagnosis II: Orthopedics and Neurology (CDI302)

The Orthopedic and Neurology course will form a DC student that will be proficient in applying the proper evaluation of the patient to work a diagnosis according to the patient's specific presentation. The student will sharpen the skills of performing, communicating and applying clinical rationale to the orthopedic and neurological examination to accurately understand the pathological references of each exam and its results. This course will cover the orthopedic and neurological examination and testing of the spinal column, upper and lower extremities, vascular disorders, space-occupying lesions and spinal cord injury, with case studies to develop the diagnostic criteria. Resulting in a capacitated clinician with the cognitive development to correctly apply the evidence-based examination to the proper working diagnosis. The clinical management, chiropractic relevance and the rehabilitation considerations will also be explained to the student during this course and emphasized accordingly. Structured observation using real and standardized patients are used for formative as well as summative evaluations. An objective structured clinical examination (OSCE) is given as a final practical exam.

Principles of Chiropractic VIII: Advanced Chiropractic Techniques (CHX308)

This course is intended to provide a practicum workshop overview of Full Spine and Diversified Techniques and will proceed to teach and integrate advanced chiropractic techniques such as Flexion/Distract (Cox Protocols), Thompson, Activator, Gonstead, CBP, among other



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techniques in the patient management. This course is designed to expose the chiropractic student to various chiropractic techniques and their respective research with the goal of broadening the students' knowledge and adjustive skills, as well as serve as motivation to be actively involved in research. Assessment and evaluation strategies for this course include MCQ Exams, Written and Oral Presentations, Performance Evaluations, Practical Examinations, O.S.C.E. and Workshops.

Diagnostic Imaging III: Bone and Joint (DIM303)

The Bone and Joint extensive imaging course consist of lectures that cover the most common musculoskeletal pathologies from diverse etiologies. Among those pathologies include but are not limited to congenital malformations of the spine and skeletal systems; endocrine disorders of the musculoskeletal system; tumor and tumor-like processes of the spine and extremities; arthritic pathologies in the spine and extremities, traumatic imaging studies and degenerative changes of the spine and joints. A digital imaging library will serve as a database for the student to access the reviews for development of the clinical skills necessary for diagnostic imaging. Each of the pathologies will be described in depth of demographic details, various location, and recent evidence base etiologies. Assessment and evaluation strategies will include Quizzes, Digital imaging identify exams, MCQ Exams, and Self-Assessment.

Diagnostic Imaging IV: Advanced Imaging (DIM304)

The advanced imaging course consists of lectures focused on identifying spinal, CNS and CNS vascular pathologies most commonly observed in a clinical setting. This course will teach the student the differences between advanced imaging studies, their clinical applications, the radiological nomenclature of the pathologies and case studies to optimize his/her clinical judgment. It will also focus on the chiropractic management and future technological developments of advanced imaging in research. This course will cover topics of MRI nomenclature, MRI T1/T2 weighted significance, radiolucency and radiopacities and their applications according to the location and imaging characteristics. It will discuss in detail the intervertebral disc pathologies, radiological findings, and terminology of the various findings. It will also cover the pathologies most commonly encountered that can mimic musculoskeletal pain, such as neoplastic processes, vascular diseases, and neurological pathologies. Assessment and evaluation strategies will include Quizzes, Written Homework, MCQ Exams, clinical vignettes, and Self-Assessment.

Evidence-Based Chiropractic Care I (EBC 301)

An introduction to the practice of implementing scientific evidence into the clinical decision-making process. The student will develop expertise in the creation of relevant clinical questions, searching the literature databases, critical appraisal of scientific articles, applying the evidence, and the evaluation of the process that was involved, combining scientific evidence with clinical experience and patient values. The course will review specific research designs that are commonly encountered in chiropractic-related literature as well as properties and use of clinical outcome measures, bias, validity, reliability, sensitivity, specificity, and concepts in statistics.



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Through case-based instructional learning and small group discussion, the student will be able to acquire the knowledge of EBP and put into practice case-based learning. The assessment strategies of this course include Written Short Exams, Portfolio-Based Assessment, Clinical Documentation Review, Peer Assessment and Literature Search Performance.

Evidence Based Chiropractic Care II (EBC302)

This course is intended to be a sequel to Evidence-Based Chiropractic Care I. It is expected to continue the development of expertise in clinical questioning, demonstrating how to use the literature databases, critical appraisal of scientific articles, applying the evidence, and the evaluation of the process, combining scientific evidence with clinical experience and patient values. The student will be able to analyze research designs that are commonly encountered in chiropractic-related literature and be able to use clinical outcome measures, bias, validity, reliability, sensitivity, specificity, and concepts in statistics. Through case-based instructional learning and small group discussion, the student will be able to enhance the knowledge of EBP and put in practice case based-learning. The assessment strategies of this course include Written Short Exams, Portfolio-Based Assessment, Clinical Documentation Review, Peer Assessment and Literature Search Performance.

Functional Approach to Basic Nutrition (FUM301)

Basic Human Nutrition for the primary health care practitioner focuses on gaining mastery over the concepts essential to understanding health and nutrition from a holistic perspective. This course consists of lectures covering the following topics: an overview of general principles about carbohydrates, lipids, proteins, vitamins and minerals, water, macronutrients and micronutrients, dietary assessment, and controversies in nutritional therapy. Additional topics focus on nutrition, environment, and common nutritional problems. This course will discuss essential trend topics of health such as diets, juicing, lifestyles (vegan, flexitarian, paleo), nutrition in fitness, intermittent fasting, clinical detox, and a guide to a 21-day plan to thrive in health. The assessment and evaluation strategies for this course include Summative MCQ Exams, Oral Presentation, and a Terminology Project.

Functional Medicine and Nutritional Therapy – Rx (FUM302)

This course's approach is in improving patient's outcomes across a wide range of chronic health conditions through careful analysis of common underlying pathways that interact to produce disease and dysfunction or health and vitality. Students will be able to fully integrate an understanding of the underlying functional mechanisms of disease with therapeutics and prevention, utilizing food and nutraceuticals as the first line of therapy when applying clinical nutrition in the patient's care plan.

The course is organized to cover from the essential topics of functional medicine, through the most related disorders, to the hands-on practice of formulating nutraceuticals. The course will be delivered using lectures, case discussions, oral presentations, assignments and VLOGs, and assessed through MCQ Exams, Oral Presentations, and a Final Project.



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Wellness in the Community (PHW303)

The Wellness in the Community course reviews the 15 core competencies for prescribing, recommending and sustaining healthy lifestyle practices for the community to attempt lifestyle change, make improvements, and achieve lifestyle goals.

Case studies and community activities highlight the management of a typical patient with chronic disease conditions and risk factors (including hypertension, pre-diabetes, obesity, sedentary lifestyle, and social isolation with a complicating mood disorder), to demonstrate the application of these skills in clinical practice. The students will be evaluated through the following strategies: Summative MCQ Exams, Oral Presentation, a Final Project and Participation in Community Activities.



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Mastering your business (BUS401)

This business course emphasizes on the business skills necessary for a rewarding and successful private practice. The curriculum topic areas are Personal Assessment, Career Assessment, Professional Skills Development, Employment Preparation, Business Preparation, Practice Management, Marketing, and Entrepreneurship Ecosystem Awareness. Course delivery methods include lectures and workshops using active learning techniques and guest speakers addressing specialized topics when needed (i.e., federal and state business permits and regulations, government tax system, financing mechanisms, entrepreneurship ecosystems).

Assessment and evaluation strategies will consist of Small/Large Group Discussions, Workshops, Clinical Application Exercises (CAEs), and Quizzes.

Patient Safety and Continuous Quality Improvement (CCA 407)

The Patient Safety and Quality Care Improvement course will introduce the fundamentals of patient safety, evaluation of quality and quality measures and principles of quality improvement to a student working in any aspect of healthcare or health services research. The course will examine the importance, background, and implications of patient safety in healthcare today as well as the central concepts, recommendations, and practices required to be part of a skilled multidisciplinary team. A combination of methodologies and carefully selected resources will facilitate the learning process and active student engagement.

The course will be organized into these three overlapping topic areas and will consist of lectures, group activities and project work. We will survey essential topic areas in patient safety. We will explore the components of quality measures and their construction and evaluation in the current healthcare milieu. Students will review and create quality measures within their chosen field and develop a quality improvement project to improve a process or outcome.

Integrative Approach to Pain Management (CCA408)

This course focuses on the etiology, chiropractic care management, nutrition, medical procedures and case studies of pain management. The course will broaden the spectrum of co-management of the most common neuro-musculoskeletal complaints seen in chiropractic settings through research, protocols and integrative care. Students will apply the clinical critical thinking skills developed in previous courses to manage appropriately and maintain best practices protocols in evaluating, treating and co-managing painful neuromuscular skeletal conditions. Assessment and evaluation strategies include MCQ exams, Case Presentations, Written Homework, and a Final Project.



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Clinical Rotation 1 (CCC401)

The Clinical Rotation 1 course is a clinical clerkship internship where the student will be able to evaluate, assess, order studies, diagnose and perform treatment with continuous supervision of the mentor or attending faculty clinician. By this stage of the educational development program, the student will be capable of sharpening the functions of a chiropractic practitioner with confidence and skill to deliver the adequate care. The clinical rotation will be performed at multisite outpatient clinical environments where integrative care is rendered, and collaborative management is encouraged and facilitated.

The students are evaluated using the following strategies: oral presentations, clinical case presentations, O.S.C.E., departmental examinations, patient encounter, one exam and the daily performance evaluation given by the preceptor and the National Board Subject Examination. All student work-up is supervised, discussed and countersigned by the attending faculty clinician. The patient logbook is evaluated at mid-rotation to identify the diagnoses to which the students need to be exposed to guarantee the clerkship requirements were accomplished. Written feedback is obtained from the students about the various clinical sites and the preceptors.

Clinical Rotation II (CCC402)

The Clinical Rotation 2 course is a clinical clerkship internship where the student will be able to evaluate, assess, order studies, diagnose and perform treatment with continuous supervision of the mentor or attending faculty clinician. By this stage of the educational development program, the student will be capable of sharpening the functions of a chiropractic practitioner with confidence and skills to deliver the adequate care. The clinical rotation will be performed at multisite outpatient clinical environment where integrative care is rendered and collaborative management is encouraged and facilitated.

The students are evaluated using the following strategies: oral presentations, clinical case presentations, O.S.C.E., departmental examinations, patient encounter, one exam and the daily performance evaluation given by the preceptor and the National Board Subject Examination. All student work-up is supervised, discussed and countersigned by the attending faculty clinician. The patient logbook is evaluated at mid-rotation to identify the diagnoses to which the students need to be exposed to guarantee the clerkship requirements were accomplished. Written feedback is obtained from the students about the various clinical sites and the preceptors.

Electives (CCC403)

The elective course is a three-module component where the student can choose the track of his/her choice within the chiropractic sports sciences, functional nutrition, and pediatrics. This module will expand the knowledge and clinical experience of the student to enhance and motivate him/her to pursue specific career opportunities.

The students are evaluated using the following strategies: oral presentations, clinical case presentations, patient encounter, one exam and the daily performance evaluation given by the



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preceptor. All student work-up is supervised, discussed and countersigned by the attending faculty clinician. The patient logbook is evaluated at mid-rotation to identify the diagnoses to which the students need to be exposed to guarantee the clerkship requirements were accomplished. Written feedback is obtained from the students about the various clinical sites and the preceptors.

Principles of Chiropractic IX: Special Populations (CHX409)

This course is focused on group populations who can benefit from chiropractic care as co-adjuvant to help them overcome their chronic poor health status. People with a diagnosis of HIV/AIDS, Cancer, Stroke, Drug abuse, and disabilities, among others are the focus of this course, and the student will have the opportunity to learn through lectures, workshops and direct care to patients in outpatient clinics.

The focus is far away from controversies and directed to provide relief and creating an opportunity to educate patients on a wellness-based lifestyle that involves chiropractic care making a daily difference in the lives of people living with chronic conditions. Chiropractic interns will render care under the mentorship and continuous observation of the faculty clinician to impact these populations through wellness education, prescribed exercises; and self-care advice. The people with chronic conditions are often given pain medications and muscle relaxants to deal with chronic pain, and a chiropractor can offer them long-term, corrective care alternatives through so they can be proactive in their health versus reactive to their suffering. The student will be evaluated using MCQ Exams, the clinical experience rubric criterion-based rating scale will be utilized to assess the student's accomplishments and identify areas for improvement, OSCE, and Workshops.

Functional Chiropractic Neurorehabilitation (CHX410)

Recent advances in brain imaging have allowed researchers to observe previously unknown dynamic properties of the brain. Brain cells once regarded as being fixed or static were now proven otherwise. Mature neurons were shown capable of increasing their communication with other nerve cells, and of promoting further growth. The adult brain is currently perceived with a capacity to re-organize itself, maximize its efficiency, and compensate for the loss of functions. These observations gave rise to the concept of neuroplasticity. From chiropractic, neuromechanical and neurophysiological perspective methods of patient evaluation to localize and subsequently correct central nervous system weakness was developed. Neuro-ophthalmic pathways have allowed further CNS evaluations and subsequent synergistic therapeutic stimulation. Therefore, this course will give a review of the appropriate integration of brain-based evaluations and therapies to allow the chiropractor to develop optimal protocols of neurorehabilitation, and for athletic equilibrium and balance enhancement. Assessment and evaluation strategies for this course include MCQ Exams, Written and Oral Presentations, Performance Evaluations, Practical Examinations, and Workshops.



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Evidence-Based Chiropractic Care III (EBC403)

This course is intended to be a sequel to Evidence-Based Chiropractic Care 2. It is expected to master the student competency in the clinical questioning and patient management, demonstrating how to use the literature databases, critical appraisal of scientific articles, applying the evidence, and the evaluation of the process, combining scientific evidence with clinical experience and patient values. The student will be able to analyze research designs that are commonly encountered in chiropractic-related literature, and be able to use clinical outcome measures, bias, validity, reliability, sensitivity, specificity, and concepts in statistics. Through case-based instructional learning and small group discussion, the student will be able to enhance the knowledge of EBP and put into practice case-based learning. The assessment strategies of this course include Portfolio-Based Assessment, Case Reports/Presentations, Professional Development Plan, Clinical Documentation Review, and Peer Assessment.

Clinical Nutrition: A Functional Approach (FUM403)

Nutrition is the sum of all the processes and functions by which growth, development, maintenance and repair of the body occur and by which reproduction is accomplished. This course presents the principles and practice of scientifically based clinical nutrition. Lecture topics include nutritional assessment (nutritional implications of the physical exam, laboratory studies, etc.), macronutrients, micronutrients, phytonutrients, enzymes, and other factors. Various conditions are discussed with emphasis on the understanding that they are a different expression of imbalances and dysfunctions that are preventable and correctable and covers the role of nutrition in the prevention and treatment of disease.

This course will pay attention to individual nutritional requirements by organ system of the body. Particular emphasis will be given to gut lining, dysbiosis, and microbiome, including Pre and Probiotics usage to repopulate. It will also cover the basic concepts of clinical detoxification processes with special mention of tonic water fasting and whole food plant-based diet as a chronic disease reversal therapy. Assessment and evaluation strategies for this course include Summative MCQ Exams, Oral Presentation, and a Terminology Project.

Chiropractic Sports Medicine and Fitness Counseling (SME401)

This course is designed to expose the student to various areas of action of the chiropractor, inside the specialty of sports chiropractic physicians, combining the scientific knowledge from biomechanics, kinesiology, and physiology with the practical experience with athletes at the laboratory of biomechanics, and in the sports field. Additionally, the students will have the opportunity to be involved in the evaluation and design of rehabilitation programs through specific workshops and group discussions. Student assessment and evaluation strategies include MCQ Exams, Written and Oral Presentations, Practical Exams, and On-Field Performance Exams.

The course is articulated with the *Comite Olimpico de Puerto Rico* (COPUR) as the sponsor of the primary field of practice.