

## **Integrated Organ-System Course 3: Musculoskeletal and Skin (MSS)**

### Course Content:

The musculoskeletal-skin course will provide an integrated approach to the musculoskeletal and integumentary systems. Students will acquire a broad understanding of the normal structure and function of muscle, bone, joint, connective tissue, and skin. A comprehensive overview of pathophysiology, epidemiology, anatomy and embryology, biostatistics, diagnostic tests, as well as therapeutic principles related to musculoskeletal and dermatologic disorders will be covered.

### Course Objectives:

- Describe the essential features of the musculoskeletal and integumentary systems, their normal structure and function, and the epidemiology, clinical features, pathogenesis, pathophysiology, and laboratory findings associated with musculoskeletal and dermatologic diseases.
- Identify appropriate therapeutic options for selected musculoskeletal and dermatologic diseases.
- Describe how epidemiologic, socioeconomic, behavioral, sociocultural, and community factors may impact the care of patients with musculoskeletal and dermatologic diseases.
- Describe how wellness, nutrition, hospitality principles, pain management, and integrative medicine may contribute to the care of patients with musculoskeletal and dermatologic diseases.
- Recognize bioethical issues germane to the medical care of patients with musculoskeletal and dermatologic diseases.
- Recognize end-of-life issues germane to patients with musculoskeletal and dermatologic diseases.
- Construct a differential diagnosis based on the clinical presentation of a patient with a musculoskeletal and/or dermatologic disease and apply diagnostic reasoning to narrow the differential.
- Develop pertinent clinical questions related to the diagnosis and/or treatment of musculoskeletal and dermatologic diseases, and utilize appropriate resources to answer those questions in a self-directed fashion.

### Content Distribution:

Week 1: Skeletal muscle

Week 2: Bone

Weeks 3 & 4: Joint

Week 5: Skin

### PBL Objectives:

- Demonstrate self-directed learning through the assessment of personal educational needs, the appropriate selection and use of learning resources, the acquisition, integration, and application of knowledge, and the assessment of educational progress.
- Demonstrate the interaction skills and discussion skills used in learning, educating, research, patient care, and advocacy.
- Demonstrate clinical reasoning to develop and refine differential diagnoses.
- Identify and use data and resources to formulate diagnostic assessments and treatment plans.

- Identify and use data and resources to formulate an integrated medical knowledge base.
- Demonstrate the integration of individual and social health processes that contribute to the complete picture of wellness and illness in patients.
- Analyze, interpret, and apply new data and knowledge relevant to clinical problems.

### Weekly Objectives:

#### Week 1 – Skeletal Muscle

- Describe the normal embryology and anatomy of the gluteal region, thigh, and hip joint.
- Recognize the salient histologic features of skeletal muscle.
- Describe the normal structure and function of skeletal muscle, integrating cell biology with the physiologic aspects.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected disorders that affect skeletal muscle, including muscular dystrophy, certain immunologic diseases (e.g. polymyositis), and rhabdomyosarcoma.
- Describe the epidemiology of selected diseases of skeletal muscle.
- Recognize the uses, contraindications, side effects, and major drug-drug interactions of pharmacologic agents that impact skeletal muscle, including NSAIDs, analgesics, and muscle relaxants.

#### Week 2 – Bone

- Describe the normal embryology and anatomy of the leg, knee, and dorsum of the foot
- Recognize the salient histologic features of bone.
- Describe the normal structure and functions of bone, integrating cell biology with the physiologic aspects.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected developmental and metabolic disorders of bone, including osteogenesis imperfecta, osteoporosis, and osteomalacia.
- Describe the clinical and diagnostic findings associated with selected infectious, traumatic, and degenerative disorders of bone, including osteomyelitis, certain fractures, and osteoarthritis.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected tumors involving the bone, including osteosarcoma and metastatic disease.
- Describe the epidemiology of selected diseases of bone.
- Recognize the major therapeutic modalities for treating disorders that affect the bone, including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions.

#### Weeks 3 & 4 – Joint

- Describe the normal embryology and anatomy of the back, dorsal scapula, and posterior arm (week 3).
- Describe the normal embryology and anatomy of the arm, axilla, and brachial plexus (week 4).
- Recognize the salient histologic features of joints.

- Describe the normal structure and functions of the joints, integrating cell biology with the physiologic aspects.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected infectious and immunologic joint disorders, including septic arthritis, Lyme disease, RA, and ankylosing spondylitis (AS).
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected metabolic, degenerative, and idiopathic joint disorders, including gout, scoliosis, and degenerative disc disease.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected tumors involving the bone, including synovial sarcoma.
- Describe the epidemiology of selected diseases of the joint.
- Recognize the major therapeutic modalities for treating disorders that affect the joints, including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions.

#### Week 5 – Skin

- Describe the normal embryology and anatomy of the forearm, hand, and wrist.
- Recognize the salient histologic features of skin.
- Describe the normal structure and functions of skin, integrating cell biology with the physiologic aspects.
- Recognize the significance of normal skin flora.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected autoimmune disorders of the skin, including collagen vascular disease, vasculitis, atopic dermatitis and psoriasis, and selected infectious diseases
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected traumatic disorders of the skin, including ulcers and the effects of radiation.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with selected neoplasms of the skin, including keratinocyte-derived tumors, melanoma, and cutaneous lymphoma.
- Describe the clinical features, pathogenesis, and diagnostic findings associated with metabolic and inherited disorders that affect the skin, including vitamin deficiencies, Ehlers-Danlos syndrome, and Marfan syndrome.
- Describe the epidemiology of selected diseases of skin.
- Recognize the major therapeutic modalities for treating disorders that affect the skin, including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions.

#### Assessment & Grading:

Students will take two summative National Board of Medical Examiners (NBME) exams that use USMLE-style questions. They will also receive formative and summative assessments for small group activities (e.g. PBL), and complete several quizzes and/or written assignments. Students will receive a pass grade based upon satisfactory participation in small group activities, the timely completion of written assignments and exercises, and successful passage on summative NBME exams.

### University Expectations:

Academic Misconduct – Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: <http://studentconduct.unlv.edu/misconduct/policy.html>.

Copyright – The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

Disability Resource Center (DRC) – The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you.

If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to me during office hours so that we may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach me before or after class to discuss your accommodation needs.

Religious Holidays Policy – Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the end of the first two weeks of classes, January 31, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university that could not have reasonably been avoided. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

Incomplete Grades - The grade of I – Incomplete – can be granted when a student has satisfactorily completed all course work up to the withdrawal date of that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor, cannot complete

the last part of the course, and the instructor believes that the student can finish the course without repeating it. A student who receives an I is responsible for making up whatever work was lacking at the end of the semester. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

Tutoring – The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex (SSC). Students may learn more about tutoring services by calling (702) 895-3177 or visiting the tutoring web site at: <http://academicsuccess.unlv.edu/tutoring/>.

UNLV Writing Center – One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>

Rebelmail – By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu.