



COURSE OUTLINE

Course Number PTA 105	Course Title Kinesiology for PTAs	Credits 3
Hours: lecture/Lab/Other 3/0/0	Pre-requisite BIO 103 Anatomy & Physiology I with a grade of C+ or higher completed within the past 5 years	Implementation Fall/Spring

Catalog description:

Required course for Physical Therapist Assistant majors. Introduces the concepts of locomotion, forces, levers and bio-mechanics. Topics include origins, insertions, innervations, and actions of prime movers for the musculoskeletal system.

Required texts/other materials:

Lippert, L. (2011). *Clinical Kinesiology & Anatomy*, 5th ed., Philadelphia PA, FA Davis Co. ISBN 978-0-8036-2363-7

Biel A, (2010). *Trail Guide to the Body 4th ed.*, Boulder CO: Books of Discovery Publishers. ISBN 978-0-9826634-0-0

Recommended:

Lippert, L. (2011) *Kinesiology Flashcards*, 3rd ed., Philadelphia PA, FA Davis. Co., ISBN 978-0-8036-2548-0

Kapit, *Anatomy Coloring Book* 3rd edition, 2002. ISBN 0-8053-5086-1

or

Muscolino, JE., (2010) *Musculoskeletal Anatomy Coloring Book*, St. Louis, MO: Mosby/Elsevier.

ISBN 978-0-323-05721-9

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Revision date: Spring 2016

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Information resources:

This course makes use of the required texts and in addition, uses the resources of the Web and software that is available for use in MS 352 free of charge to all learners enrolled in the class. Software includes:

- Primal Pictures: Interactive Functional Anatomy

- Primal Pictures: Essential Regional Anatomy
- Primal Pictures: Anatomy for Pilates
- Primal Pictures: Sports Injuries Series-2nd edition

Course Competencies/Goals:

Following the successful completion of this course with a grade of C+ or higher, the learner will be able to:

1. cite the origins, insertions, innervations, and actions of prime movers for the musculoskeletal system and indicate why this knowledge would be considered foundation information for the recommendation of exercises for an individual with weakness or muscle injury
2. identify major muscle groups on the surface anatomy of fellow classmates, differentiating between symmetrical muscle development and asymmetrical hypertrophy while discussing the potential reasons why this might have occurred and problems that might occur due to muscle hypertrophy
3. discuss the important role that position plays in muscle contractions in determining the type of contraction and the influences of gravity which may ultimately prevent or improve muscle strengthening activities
4. identify joint positions, types of muscle contractions and the prime movers involved for specific activities of daily living from static photographs
5. explain the differences between the various parts of muscles, the source of their innervations and why it's important to be able to explain that information in simple terms to someone else

Course-specific General Education Knowledge Goals and Core Skills.

General Education Knowledge Goals

Goal 1. Communication. Students will communicate effectively in both speech and writing.

Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

MCCC Core Skills

Goal A. Written and Oral Communication in English. Students will communicate effectively in speech and writing, and demonstrate proficiency in reading.

Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.

Goal E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.

Goal F. Collaboration and Cooperation. Students will develop the interpersonal skills required for effective performance in group situations.

Units of study in detail:

		Goals:	Learning Objectives
<u>Unit 1</u>	Course Introduction: Basic Principles of Kinesiology	A, B, F	P1, A3, P3, C1, C4, A1, A2
	Kinetics, Torque, Line of Pull, Skeletal System, Types of Bones Structure & Function of Joints	1, F, 4	P1, A3, P3, C1, C4, A2
<u>Unit 2</u>	Skeletal Muscles, Types of Contractions, Active & Passive Range of Motion Length-Tension Relationship of Muscle, Strengthening, Muscular Tightness, Stretching Muscle	1, E, F, 4	P1, P3, C6
<u>Unit 3</u>	Structure & Function of the Shoulder Complex	1, E, F, 4	P1, P3, C1, C4, A3, C2,

			P2,C3,A3
	Shoulder Complex Shoulder Muscle & Joint Interaction	1, E, F, 4	P1, P3,C1,C4, A3, A1,A2,
Unit 4	Structure & Function of the Elbow & Forearm Complex	1, E, F, 4	P1, P3,C1,C4, A3, A1,A2
Unit 5	Structure & Function of the Wrist Structure & Function of the Hand	1, E, F, 4	
Unit 6	Structure & Function of the Vertebral Column Postural Assessment & Function	1, E, F, 4, B	
	Postural Assessment & Function continued	1, E, F, 4	
Unit 7	Structure & Function of the Pelvis & Hip	1, E, F, 4	P1, P3,C1,C4, A3, A1, A2
Unit 8	Structure & Function of the Knee	1, E, F, 4	P1, A3,P3,C1, C4,A1,A2
	Structure & Function of the Knee	1, E, F, 4	P1, A3,P3,C1, C4,A1,A2
Unit 9	Structure of the Ankle & Foot Functional Analysis of Activities/Gait	1, E, F, 4, B	P1, P3,C1,C4,C5, A3
Unit 10	Kinesiology of Mastication and Ventilation Temporomandibular Joint Ventilation & Facial Communication	1, E, F, 4, B	P1, A3 P3, C1,C4, A1, A2, C2, A3

**Learning Objectives have been identified in each of the following domains of learning:
The student will be able to...**

Cognitive/Knowledge the student/learner will be able to successfully:

1. cite the origin, insertion, innervation and action of the prime movers for the upper extremity, lower extremity and trunk
2. differentiate between the various types of muscle contractions when considering a scenario on a written exam
3. differentiate between agonists, antagonists and stabilizing muscle groups when considering them on a written exam
4. identify specific muscles in photographs of men and women
5. identify muscles that are utilized for various activities of daily living (ADL)
6. describe the principles of measuring joint Range of Motion (ROM)

Psychomotor the student/learner will be able to successfully:

1. demonstrate effective communication skills with classmates during the performance of class reviews and class discussions
2. perform the action of each for the muscles studied and identify the action as described for a written exam
3. perform/lead a review of class materials with classmates in front of the class

Affective the student/learner will be able to successfully:

1. defend the importance of studying and reviewing class materials by demonstrating this in preparation for exams and class reviews
2. defend the importance of the oral presentation of technical materials by providing review sessions for classmates at the beginning of class
3. demonstrate and defend the importance of accurate medical terminology by utilizing medical terminology during the review sessions in class and on written exams

Evaluation of student learning

Grading

% of grade	Activity	Number within course
60	Written Exams	5
20	Quizzes	6
10	Presentation(s)	2
10	Class Participation	Continuous

Academic Integrity Statement: There is a zero tolerance policy for plagiarism. Any work that violates the MCCC Academic Integrity policy will receive a grade of "0" and the learner will be reported to the College's Academic Integrity Committee consistent with College policies. See <http://mlink.mccc.edu/omb/OMB210.pdf>

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