PTA112
KINESIOLOGY
2 Credit Hours

Prepared by:
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PTA112 Kinesiology

I. CATALOGUE DESCRIPTION

A. Pre-requisite: Admission to the Physical Therapist Assistant Program and Reading Proficiency

B. Credit hour award: 2

C. Description: This lecture course presents fundamental information on the biomechanical basis of human movement, with in-depth study of the structure and function of each joint within the musculoskeletal system and how each works together to allow for postural control and stability as well as for dynamic movements seen in gait. (S)

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES (Numbers in parentheses refer to CAPTE performance expectations)

<table>
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<tr>
<th>Expected Learning Outcomes</th>
<th>Assessment Measures</th>
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<tr>
<td>Students will demonstrate a clinically relevant and in depth working knowledge of the skeletal, muscular, and nervous systems, integrating content learned in anatomy and physiology. (3.3.2.8.10)</td>
<td>Summative Written Examinations&lt;br&gt;Quizzes&lt;br&gt;Written Assignments</td>
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<td>Students will apply knowledge and principles of anatomy, physiology, biomechanics, and kinesiology to functional tasks, static, and dynamic posture, and gait. (3.3.2.8.9)</td>
<td>Summative Written Examinations&lt;br&gt;Written Assignments</td>
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<td>Students will identify the origin, insertion, action, and innervation for the muscles associated with the cervical, thoracic, lumbar sacral spine, shoulder, elbow, wrist, hand, pelvis, hip, knee, and ankle joints.</td>
<td>Quizzes&lt;br&gt;Written Assignments</td>
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<td>Students will demonstrate a clinically relevant and in-depth working knowledge of joint structures and components, and principles of joint motion.</td>
<td>Quizzes&lt;br&gt;Written Assignments&lt;br&gt;Formative Assessment</td>
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<td>Students will demonstrate a working knowledge of the concepts of forces, and the relationship of physical laws and biomechanical principles.</td>
<td>Quizzes&lt;br&gt;Written Assignments&lt;br&gt;Formative Assessment</td>
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<td>Students will demonstrate the ability to describe functional movement patterns in terms of joint motion and muscle activity.</td>
<td>Quizzes&lt;br&gt;Written Assignments&lt;br&gt;Group Project</td>
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III. OUTLINE OF TOPICS

A. Skeletal and Articular Systems
   1. Body Segments
   2. Types of Motion
   3. Types of Joints
   4. Planes and Axes
   5. Degrees of Freedom
   6. Osteokinematic Motions

B. Arthrokinematics
   1. Joint Congruency
   2. End Feel
   3. Accessory Motions and Forces
   4. Convex-Concave Rule

C. Muscular System
   1. Attachments
   2. Fiber Arrangement
   3. Length-Tension Relationship
   4. Types of Contraction
   5. Angle of Pull

D. Biomechanics
   1. Laws of Motion
   2. Forces
   3. Torque
   4. Stability
   5. Levers
   6. Pulleys

E. Joints and Motions, Bones and Landmarks, Ligaments, Associated Muscles, Function, and Range of Motion for each of the following:
   1. Shoulder Girdle
   2. Shoulder Joint
   3. Elbow Joint
   4. Wrist Joint
   5. Hand
   6. Temporomandibular Joint
   7. Neck and Trunk
   8. Thoracic Cage
   9. Pelvic Girdle
   10. Hip Joint
   11. Knee Joint
   12. Ankle and Foot Joints
F. Posture
1. Vertebral Alignment
2. Standing Posture
3. Sitting Posture

G. Gait
1. Stance Phase
2. Swing Phase
3. Determinants of Gait

IV. METHODS OF INSTRUCTION

A. Lecture
B. Textbook Readings
C. Active Learning in the classroom setting
D. Case Studies

V. REQUIRED TEXTBOOKS


RECOMMENDED TEXTBOOK:


VI. REQUIRED MATERIALS

A. A computer with internet access and basic software to include Word and PowerPoint (available through Jefferson College labs)

B. Course home page available through Blackboard
VII. SUPPLEMENTAL REFERENCES

A. Library Resources
   2. Periodicals

B. Internet Resources
   1. Textbook companion website
   2. American Physical Therapy Association website

VIII. METHODS OF EVALUATION

A. Summative Written Examinations: 40%
B. Quizzes: 25%
C. Attendance/Participation: 13%
D. Formative Assessment and Written Assignments: 12%
E. Group Project 10%

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library; phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook. (See College website www.jeffco.edu.)

XI. ATTENDANCE STATEMENT

Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.