Brookes College

Pharmacy Assistant Diploma Program

Course:
Applied Anatomy, Physiology, & Pharmacology Curriculum

Brookes College Pharmacy Assistant Program
Applied Anatomy, Physiology, & Pharmacology
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Course Syllabus: Pharmacy Assistant Essentials - Applied Anatomy, Physiology, & Pharmacology

Course Description**:**

This course includes different basic processes and terminologies of body functions, diseases, and medication. It introduces the body systems' structure and parts from a cellular level, the effect of various medicines, administration of medication and their side effects.

Course Duration:

- 80 hours
- 4 weeks
- 20 hours per week
- 10 hours of Online Synchronous instruction
- 10 hours of Self-directed learning

Course Goals:

- Establish a robust comprehension of human anatomy, physiology, and pharmacology.
- Attain essential proficiency in medical terminology, body systems, diseases, and medications.
- Cultivate skills crucial for providing invaluable support within the realm of pharmacy and healthcare.

Course Format:

- Lectures, readings, multimedia materials, and case studies.
- Interactive discussions and group activities to encourage engagement.
- Guest speakers from the healthcare field to provide real-world insights.
- Weekly assignments to apply theoretical knowledge to practical scenarios.

Course Outcomes: Upon successful completion, students will have the capability to:

- Demonstrate proficiency in anatomical terms and the interrelation of body systems.
- Articulate fundamental principles of chemistry, cells, and tissues pertinent to healthcare.
- Identify skin layers, body membranes, bone structures, and their clinical implications.
- Describe different muscle types, nerve functionalities, and sensory systems.
- Recognize major endocrine glands, comprehend blood components, and grasp cardiovascular structures.
- Understand the lymphatic system, immunity mechanisms, and principles of vaccination.

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Textbook: e-texts have Power Point slides, Instructor manual, tests, and test banks to support instructional delivery:

- Title: Applied Anatomy, Physiology, and Pharmacology for Medical Administrator.
- Author: Elaine N Marieb; Suzanne M. Keller.
- Publisher: Pearson.
- eText ISBN: 9780135624425, 0135624428

Course Outline:

Week 1: Foundations of Human Anatomy and Physiology

- Introduction to anatomical terms and body systems.
- Exploring elements, compounds, and chemical reactions.
- Understanding cells, their structures, and functions.
- Studying different types of tissues and their roles.

Week 2: Skin, Body Membranes, and The Skeletal System

- Investigating the skin's layers, functions, and common conditions.
- Exploring various body membranes and their significance.
- Analyzing bone structure, types, and growth.
- Understanding common skeletal disorders and related medications.

Week 3: The Muscular System, Nervous System, and Special Senses

- Identifying muscle types, their functions, and movement.
- Exploring neuron structure and nerve impulses.
- Understanding special senses: vision, hearing, taste, smell.
- Discussing neurological medications and sensory disorders.

Week 4: The Endocrine System, Blood, Cardiovascular System, and The Lymphatic System

- Examining major endocrine glands and hormone functions.
- Understanding blood components, types, and transfusions.
- Analyzing heart structure, blood vessels, and circulation.

- Exploring the lymphatic system, immunity, and vaccines.

Assessment and Review:

- Weekly quizzes and assignments (40%)
- Mid-term exam (20%)
- Final exam (30%)
- Participation in synchronous and asynchronous sessions (10%)

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Grading:

Percentage Range	Letter Grade	Grade Points	Description
90 – 100	A+	4.0	Excellent (4)
85 – 89	A	4.0	
80 – 84	A-	3.7	
77 – 79	B+	3.3	Proficient (3)
73 – 76	B	3.0	
70 – 72	B-	2.7	
67 – 69	C+	2.3	Competent (2)
63 – 66	C	2	
60 – 62	C-	1.7	
55 – 59	D+	1.3	
50 – 54	D	1.0	Developing (1)
0 – 49	F	0.0	Not Evident (0)

Important Dates:

- Midterm Examination: [Date]
- Final Project Presentation: [Date]
- Final Examination: [Date]

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Module Plans: Pharmacy Assistant Essentials - Applied Anatomy, Physiology, & Pharmacology

Course Duration:

- 80 hours
- 4 weeks
- 20 hours per week
- 10 hours of Online Synchronous instruction
- 10 hours of Self-directed learning

Course Description:

This course equips Pharmacy Assistant students with an in-depth understanding of applied anatomy, physiology, and pharmacology over a four-week period. Students will be adept at providing tailored support to healthcare professionals and pharmacists in diverse medical contexts.

Course Format:

The course is structured into 10 hours of synchronous instruction supplemented by 10 hours of self-directed learning. The sessions incorporate lectures, discussions, interactive activities, and assessments to ensure a comprehensive learning experience.

Textbook: e-texts have Power Point slides, Instructor manual, tests, and test banks to support instructional delivery:

- Title: Applied Anatomy, Physiology, and Pharmacology for Medical Administrator
- Author: Elaine N Marieb; Suzanne M. Keller
- Publisher: Pearson
- eText ISBN: 9780135624425, 0135624428

Module Outlines:

Week 1: Foundations of Human Anatomy and Physiology

Learning Outcomes: By the end of this module, students will be able to**:**

- Define key anatomical terms and body cavities.
- Identify the interdependence of body systems.
- Understand medical terminology used in anatomy and physiology.

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Session 1: Introduction to Human Anatomy & Physiology

Synchronous Instruction (2 hours)

Define key anatomical terms and body cavities.

- Identify the interdependence of body systems.

Activities:

- Live lecture on anatomical terms and body cavities.
- Group discussion on body systems and their interactions.

Self-Directed Learning (2 hours)

Activities:

- Study medical terminology used in anatomy and physiology.

Assessment:

- Quizzes on anatomical terms and body system interactions.

Session 2: Basic Chemistry and Its Role in Pharmacology

Synchronous Instruction (2.5 hours)

Topics:

- Describe atoms, elements, and compounds.
- Explain chemical bonding and reactions.

Activities:

- Interactive lecture on atomic structure and chemical bonding.
- Virtual laboratory activity on chemical reactions.

Self-Directed Learning (2.5 hours)

Activities:

- Recognize the importance of chemistry in pharmacology.

Assessment:

- Assignment on the application of chemistry in pharmacology.

Week 2: Skeletal System and Muscular System

Learning Outcomes**:** By the end of this module, students will be able to**:**

- Explore the anatomy of bones.
- Understand muscle contraction mechanisms.
- Recognize the role of muscles in movement.

Session 1: Bone Structure, Types, and Growth

Synchronous Instruction (2.5 hours)

Topics:

- Explore the anatomy of bones.
- Differentiate between bone types and their functions.

Activities:

- Live lecture on bone structure and functions.
- Interactive 3D modeling of bone types.

Self-Directed Learning (2.5 hours)

Activities:

- Understand bone development and growth.

Assessment:

- Quizzes on bone anatomy and growth processes.

Session 2: Muscle Types, Contraction, and Movement

Synchronous Instruction (2.5 hours)

Topics:

- Identify different muscle types and their functions.
- Understand muscle contraction mechanisms.

Activities:

- Video demonstration of muscle types and functions.
- Hands-on experiment on muscle contraction using models.

Self-Directed Learning (2.5 hours)

Activities:

- Explore the role of muscles in movement.

Assessment:

- Assignment on muscle types and their functions.

Week 3: Nervous System and Special Senses

Learning Outcomes**:** By the end of this module, students will be able to**:**

- Describe the nervous system's divisions and functions.
- Understand the structure and function of neurons.
- Explore the special senses: vision, hearing, taste, smell.

Session 1: Nervous System and Neurons

Synchronous Instruction (2.5 hours)

Topics:

- Describe the nervous system's divisions and functions.
- Understand the structure and function of neurons.

Activities:

- Interactive lecture on nervous system divisions.
- Virtual neuron simulation activity.
- Explore the special senses: vision, hearing, taste, smell.

Assessment:

- Quizzes on nervous system divisions and neuron structure.

Session 2: Introduction to Neuropharmacology and Sensory Disorders

Synchronous Instruction (2.5 hours)

Topics:

- Introduce the basics of neuropharmacology.
- Discuss common sensory disorders and their treatments.

Activities:

- Case study analysis of neuropharmacological interventions.
- Research assignment on a specific sensory disorder and related medications.

Self-Directed Learning (2.5 hours)

Activities:

- Explore medications that affect the nervous system.

Assessment:

- Assignment on medications targeting the nervous system.

Week 4: Skin, Body Membranes, and Their Functions

Learning Outcomes**:** By the end of this module, students will be able to**:**

- Examine the layers and functions of the skin.
- Identify common skin conditions and their treatments.

Session 1: Skin Layers and Functions

Synchronous Instruction (2.5 hours)

Topics:

- Examine the layers and functions of the skin.

Activities:

- Virtual tour of the skin's layers and functions.
- Collaborative discussion on the roles of various body membranes.

Self-Directed Learning **(2.5 hours)**

Activities:

- Understand different types of body membranes.

Assessment:

- Quizzes on skin anatomy and functions.

Session 2: Common Skin Conditions and Their Treatments

Synchronous Instruction (2.5 hours)

Topics:

- Identify common skin conditions and their treatments.

Activities:

- Research assignment on a specific skin condition and its treatment.
- Self-directed reading on skin disorders and related medications.

Self-Directed Learning (2.5 hours)

Activities:

- Understand different types of body membranes.

Assessment:

- Assignment on skin conditions and treatments.

Assessment and Review:

- Weekly quizzes and assignments (40%)
- Mid-term exam (20%)
- Final exam (30%)
- Participation in synchronous and asynchronous sessions (10%)

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Sample Lesson Plan: Introduction to Human Anatomy & Physiology

Topic: Anatomical Terminology and Body Cavities

Lesson Duration:

- 5 hours
- 2.5 hours online synchronized instruction
- 2.5 hours of online self-directed learning)

Learning Outcomes: By the end of this lesson, students will be able to:

1. Define key anatomical terms and understand their significance.
2. Identify major body cavities and comprehend their contents.
3. Apply anatomical terminology to effectively describe body structures.

Textbook: e-texts have Power Point slides, Instructor manual, tests, and test banks to support instructional delivery:

- Title: Applied Anatomy, Physiology, and Pharmacology for Medical Administrator.
- Author: Elaine N Marieb; Suzanne M. Keller.
- Publisher: Pearson.
- eText ISBN: 9780135624425, 0135624428

Materials:

- Virtual learning platform
- Interactive quizzes and activities
- Virtual whiteboard and drawing tools
- Pre-recorded video tutorials
- Online flashcards and quizzes

Lesson Outline:

Introduction

Online Synchronous Instruction (2.5 hours)

Topic 1: Introduction to Anatomical Terminology

- Discuss the importance of anatomical terminology in healthcare.
- Explain anatomical position and directional terms (e.g., anterior, posterior, superior, inferior).

- Conduct an interactive quiz to reinforce the understanding of directional terms.

Topic 2: Anatomical Planes and Sections

- Discuss anatomical planes (sagittal, frontal, transverse) and their significance.
- Engage students in a virtual whiteboard activity: Drawing and labeling anatomical planes.
- Organize a group activity to analyze medical imaging and identify planes.

Topic 3: Introduction to Body Cavities

- Explain major body cavities: dorsal (cranial, spinal) and ventral (thoracic, abdominopelvic).
- Provide an overview of the contents and organs within each cavity.
- Present a real-life case study to apply knowledge of body cavities in diagnosing medical conditions.

Topic 4: Interactive Activity - Labeling Body Cavities

- Conduct a virtual interactive activity: Drag-and-drop labeling of body cavities.
- Facilitate a group discussion on the interrelationships between body systems within the cavities.
- Engage students in collaborative problem-solving: Analyzing a hypothetical case to determine the affected body cavity.

Review and Q&A

- Recap key anatomical terms, directional terms, and body cavities.
- Open a discussion and Q&A session to address student queries.
- Announce asynchronous self-study materials and assignments.

Break

Online Self-Directed Learning (2.5 hours)

Activity 1: Anatomy Terminology Practice

- Engage with online flashcards or quizzes to reinforce directional terms and anatomical position.
- Read relevant textbook sections on anatomical terminology and highlight key concepts.
- Complete self-assessment questions to gauge understanding.

Activity 2: Exploring Anatomical Planes and Sections

- Watch prerecorded video tutorials on anatomical planes and sections.
- Independently draw and label anatomical planes on provided diagrams.
- Explore interactive 3D models to visualize the impact of different sections on anatomical structures.

Activity 3: Body Cavities Research

- Conduct research on a specific organ or system within a body cavity.
- Prepare a short presentation or infographic summarizing the cavity, its contents, and related functions.
- Participate in online discussion forums to share findings and learn from peers.

Activity 4: Reflective Journal Entry

- Write a journal entry reflecting on the practical applications of understanding anatomical terminology and body cavities.
- Consider scenarios where this knowledge would be crucial for healthcare professionals.
- Submit the journal entry for instructor review and feedback.

Assessment categories

- Synchronous Activities Participation
- Interactive Activity - Labeling Body Cavities
- Asynchronous Activities Completion and Submission (20%)
- Self-Assessment Quizzes and Assignments (20%)
- Final Reflection Journal Entry (30%)

Conclusion and Recap

- Summarize the key points covered during the synchronous session.
- Encourage students to review self-directed learning materials and complete assignments.

Homework Assignment:

- Complete assigned self-assessment quizzes and assignments.
- Prepare for the next lesson by reviewing pre-readings on anatomical planes and sections.

Learning Outcomes Review:

- Review the session's learning objectives and encourage students to reflect on their progress toward achieving them.

Top of Form

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Course Rubric: Pharmacy Assistant Essentials - Applied Anatomy, Physiology, & Pharmacology

Weekly Quizzes and Assignments (40%)

Assessment Criteria	Excellent (4)	Proficient(3)	Competent (2)	Developing (1)	Not Evident(0)
Completion	All quizzes and assignments submitted on time and fully completed	Most quizzes and assignments submitted on time and completed	Quizzes and assignments mostly completed and submitted on time	Several quizzes and assignments incomplete or submitted late	Few or no quizzes/assignments submitted
Accuracy and Quality	Answers are accurate, thorough, and demonstrate a deep understanding of concepts	Answers are mostly accurate and demonstrate understanding	Answers are basic but show an understanding of concepts	Answers are incomplete or contain errors	Answers show a lack of understanding
Critical Thinking	Analysis and application of concepts are insightful and well-developed	Analysis and application of concepts are present	Basic analysis and application of concepts	Limited analysis and application of concepts	Little to no analysis or application
Communication	Answers are well-organized, clear, and effectively communicate ideas	Answers are organized and clear	Answers are somewhat organized and clear	Answers are disorganized or unclear	Answers are difficult to understand

Mid-term Exam (20%)

Assessment Criteria	Excellent (4)	Proficient(3)	Competent (2)	Developing (1)	Not Evident(0)
Knowledge Mastery	Demonstrates comprehensive understanding of course material	Displays good understanding of course material	Displays satisfactory understanding of course material	Shows partial understanding of course material	Fails to demonstrate understanding
Concept Application	Applies concepts to various scenarios accurately and effectively	Applies concepts with minor errors	Applies concepts with noticeable errors	Struggles to apply concepts effectively	Unable to apply concepts
Critical Analysis	Analyzes questions deeply and provides thorough, insightful responses	Analyzes questions and provides appropriate responses	Provides basic analysis with limited insight	Analysis is incomplete or inaccurate	Lacks analysis

Time Management	Completes the exam within the allotted time frame	Mostly completes the exam within the allotted time frame	Partially completes the exam within the allotted time frame	Struggles to complete the exam within the allotted time frame	Does not complete the exam within the allotted time

Final Exam (30%)

Assessment Criteria	Excellent (4)	Proficient(3)	Competent (2)	Developing (1)	Not Evident(0)
Knowledge Mastery	Demonstrates comprehensive understanding of course material	Displays good understanding of course material	Displays satisfactory understanding of course material	Shows partial understanding of course material	Fails to demonstrate understanding
Concept Application	Applies concepts to various scenarios accurately and effectively	Applies concepts with minor errors	Applies concepts with noticeable errors	Struggles to apply concepts effectively	Unable to apply concepts
Critical Analysis	Analyzes questions deeply and provides thorough, insightful responses	Analyzes questions and provides appropriate responses	Provides basic analysis with limited insight	Analysis is incomplete or inaccurate	Lacks analysis
Time Management	Completes the exam within the allotted time frame	Mostly completes the exam within the allotted time frame	Partially completes the exam within the allotted time frame	Struggles to complete the exam within the allotted time frame	Does not complete the exam within the allotted time

Participation in Synchronous and Asynchronous Sessions (10%)

Assessment Criteria	Excellent (4)	Proficient(3)	Competent (2)	Developing (1)	Not Evident(0)
Engagement	Actively participates, contributes insights, and engages in discussions	Participates and contributes meaningfully to discussions	Participates but contributions are limited	Rarely participates or contributes minimally	Does not participate in discussions
Timeliness	Consistently attends synchronous sessions and completes asynchronous activities on time	Mostly attends synchronous sessions and completes asynchronous activities on time	Attends sessions and completes activities with occasional delays	Irregular attendance and delays in completing activities	Poor attendance and consistently late