

**BODY SYSTEMS AND DISORDERS****INDUSTRY SECTOR:** Health Science and Medical Technology Sector**PATHWAY:** Patient Care**CALPADS TITLE:** Advanced Patient Care (Capstone)**CALPADS CODE:** 7922**HOURS:**

Total	Classroom	Laboratory/CC/CVE
180	134	46

JOB TITLE	O*NET CODE	JOB TITLE	O*NET CODE
Physician Assistants	29-1071.00	Family Medicine Physicians	29-1215.00
Physical Therapist Aides	31-2022.00	Medical Assistants	31-9092.00

**COURSE DESCRIPTION:**

Body Systems and Disorders provides students with a rigorous medical science course designed to support career and college readiness. Students will learn the anatomy, physiology, and function of the major body systems. Each unit will also highlight common diseases and disorders. Students will gain a deep understanding of the signs, symptoms, and causes of common diseases and disorders.

**A-G APPROVAL:** Pending**ARTICULATION:** None**DUAL ENROLLMENT:** None**PREREQUISITES:**

Prerequisite
Medical Careers and Health Systems
Emergency Medical Responder

## METHODS OF INSTRUCTION

- Direct instruction
- Group and individual applied projects
- Multimedia
- Demonstration
- Field trips
- Guest speakers

## STUDENT EVALUATION:

- Student projects
- Written work
- Exams
- Observation record of student performance
- Completion of assignments

## INDUSTRY CERTIFICATION:

- None

## RECOMMENDED TEXTS:

- Human Diseases By Neighbors and Tennehill-Jones, Cengage Learning 6th Edition
- Body Structures and Functions By Scott and Fong, Delmar Learning, 13th Edition

## PROGRAM OF STUDY

Grade	Fall	Spring	Year	Course Type	Course Name
10, 11, 12			<input type="checkbox"/>	Introductory	Medical Careers and Health Systems
10, 11, 12			<input type="checkbox"/>	Concentrator	Emergency Medical Responder
11, 12			<input type="checkbox"/>	Capstone	Body Systems and Disorders

I.	INTRODUCTION AND ORIENTATION	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Demonstrate awareness of course objectives and competencies</li> <li>• Understand course requirements and student expectations</li> <li>• Demonstrate awareness of the industry standards and career opportunities</li> </ul>	2	0	<b>Academic:</b> LS: 11-12.1 <b>CTE Anchor:</b> Career Planning and Management: 3.4 <b>CTE Pathway:</b> B1.1
II.	DISEASE	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Define disease</li> <li>• Distinguish between acute and chronic disease</li> <li>• Understand that pathology is the study of changes in bodily structure and function as a result of the disease</li> <li>• Distinguish between anatomic and clinical pathology</li> <li>• Understand how 'normal' is defined in medical professions</li> <li>• Differentiate between symptom and sign</li> <li>• Understand the usefulness of tests in the diagnosis</li> <li>• Understand the meaning of normal range as it applies to medical tests</li> </ul>	6	4	<b>Academic:</b> RLST: 11-12.2, 11-12.4 LS: LS1, LS1.A, LS1.B <b>CTE Anchor:</b> Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.1, B2.2, B2.3, B2.4, B4.4, B5.1, B5.6, B7.2
III.	CELL PHYSIOLOGY	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Describe basic cell structure and normal cell function</li> <li>• Describe the transmembrane movement</li> <li>• Understand the importance of fluid balance in maintaining the integrity of cell structure</li> <li>• Describe symptoms of water excess and of dehydration</li> <li>• Identify electrolytes</li> <li>• Understand the importance of electrolyte imbalance</li> <li>• Identify symptoms and effects of electrolyte imbalance</li> <li>• Describe acid-base balance in healthy human physiology</li> <li>• Describe symptoms and effects of imbalance in acid/base</li> </ul>	10	5	<b>Academic:</b> RLST: 11-12.1, 11-12.2 LS: LS1.B, LS1, LS1.A <b>CTE Anchor:</b> Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.4, B2.3, B2.2, B2.1, B5.1, B5.2
IV.	MUSCULOSKELETAL SYSTEM	CR	Lab/ CC	Standards
	<ul style="list-style-type: none"> <li>• Describe the gross structure, formation, and function of bone</li> <li>• Explain the composition of bone</li> <li>• Identify the components of the axial and appendicular skeleton</li> <li>• Identify the types and names of muscles</li> <li>• Explain the physiology of contraction</li> <li>• Identify types of fractures, treatment, and interventions, using x-rays</li> <li>• Demonstrate first aid procedures</li> <li>• Identify disorders of the muscles and bones, including etiology, manifestations, and management</li> <li>• Demonstrate crutch walking procedures</li> <li>• Identify application of a cast, brace, etc., to the arm</li> <li>• Demonstrate and practice proper body mechanics when transferring patients</li> <li>• Demonstrate and practice hip precaution procedures for patients with hip replacement surgery</li> </ul>	10	5	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3, 11-12.4 LS: LS1.B, LS1.D, LS1, LS1.A <b>CTE Anchor:</b> Communications: 2.7, 2.8 Problem Solving and Critical Thinking: 5.1, 5.2,

				5.4, 5.5, 5.6 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.1, B2.2, B2.3, B2.4, B3.2, B4.4, B5.2, B5.5, B5.1, B7.2, B8.1, B8.2, B8.3, B12.1
<b>V.</b>	<b>CARDIOVASCULAR/CIRULATORY SYSTEM</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Define blood pressure, and distinguish between systolic and diastolic pressures</li> <li>• Identify normal blood pressure range</li> <li>• Describe and identify the gross structure of the heart</li> <li>• Describe the internal conduction systems of the heart</li> <li>• Identify normal/abnormal heart sounds</li> <li>• Explain how the heart and circulatory system function</li> <li>• Discuss the function of the different types of blood cells</li> <li>• Distinguish blood types</li> <li>• Identify common disorders of the heart and circulatory system, including etiology, manifestations, and management</li> <li>• Describe a variety of diagnostic procedures for heart disorders</li> <li>• Examine blood smear and formed elements under high power magnification</li> <li>• Measure blood cholesterol and distinguish between different cholesterol values</li> <li>• Demonstrate use of an EKG machine</li> </ul>	10	5	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3, 11-12.4 A-CED: 1 LS: LS1, LS1.B, LS1.A, LS1.C <b>CTE Anchor:</b> Communications: 2.1 Technology: 4.3 Problem Solving and Critical Thinking: 5.1, 5.5 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.4, B2.2, B2.3, B2.1, B3.2, B3.1, B4.4, B5.6, B5.1, B7.2, B9.3
<b>VI.</b>	<b>NERVOUS SYSTEM</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Identify components of the nervous system and their functions</li> <li>• Identify cerebral function disorders, including etiology, manifestations, and treatment</li> <li>• Identify sensory and motor disorders, including etiology, manifestations, and treatment</li> <li>• Identify tests of sensory-motor function</li> <li>• Demonstrate vision and hearing testing procedures</li> </ul>	10	5	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3, 11-12.4 LS: LS1, LS1.A, LS1.B, LS1.D, LS1.C <b>CTE Anchor:</b> Communications: 2.7, 2.8 Problem Solving and Critical Thinking: 5.1, 5.2, 5.5 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.4, B2.1, B2.3,

				B2.2, B3.1, B3.2, B4.3, B4.4, B5.1, B7.2
<b>VII.</b>	<b>RESPIRATORY SYSTEM</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Identify the structures of the respiratory tract</li> <li>Discuss the mechanism of inspiration and expiration</li> <li>Describe the regulation of breathing and transport of gases</li> <li>Identify normal/abnormal lung sounds</li> <li>Explain procedures used to evaluate respiratory diseases</li> <li>Identify symptoms, etiology, and pathology of common obstructive pulmonary disorders</li> <li>Describe the management of common respiratory disorders</li> <li>Identify practices that encourage a healthy respiratory system, and identify environmental hazards that can be reduced or eliminated</li> <li>Demonstrate the use of a spirometer in measuring total lung capacity</li> </ul>	10	5	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3 A-CED: 1 LS: LS1.B, LS1.A, LS1 <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.5 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.4, B2.2, B2.3, B2.1, B3.1, B4.4, B5.1, B5.6, B7.2
<b>VIII.</b>	<b>IMMUNE SYSTEM</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Distinguish components of the immune system and their functions</li> <li>Understand defense mechanisms such as mechanical factors and secretions that protect the body against infection</li> <li>Identify steps in the inflammatory process, and distinguish types of inflammation</li> <li>Identify factors that contribute to lowered resistance to infection</li> <li>Identify common immune disorders, including pathogenesis, manifestations, and treatment</li> <li>Identify common tests that are indicators of immune system health</li> </ul>	10	5	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3, 11-12.4 LS: LS1, LS1.A, LS1.B <b>CTE Anchor:</b> Communications: 2.7, 2.8 Technology: 4.3 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.4, B2.1, B2.3, B2.2, B4.4, B5.6, B5.5, B5.1, B7.2
<b>IX.</b>	<b>INTEGUMENTARY</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Recognize skin as the largest organ and a leading indicator of health or disease</li> <li>Understand the role of skin as a protective barrier</li> <li>Describe the structure of the skin</li> <li>Recognize that any compromise to the skin can introduce pathogens</li> <li>Discuss signs and symptoms of infection</li> <li>Recognize the protective role of the inflammatory process</li> <li>Discuss common skin disorders and their etiology, including fungus, burns, cancer, and lesions</li> <li>Identify practices to maintain healthy skin</li> </ul>	3	2	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2 LS: LS1.B, LS1.A, LS1 <b>CTE Anchor:</b> Technical Knowledge and

				Skills: 10.1 <b>CTE Pathway:</b> B2.3, B2.1, B2.2, B2.4, B4.4, B5.1, B5.4, B7.2
<b>X.</b>	<b>GASTROINTESTINAL SYSTEM</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Identify components of the gastrointestinal system and their normal functioning</li> <li>Identify disorders of the upper GI tract, including etiology, manifestations, and management</li> <li>Identify disorders of the lower GI tract, including etiology, manifestations, and management</li> <li>Identify disorders of the liver, gall bladder, and pancreas, including etiology, manifestations, and management</li> <li>Identify common tests of gastrointestinal functioning</li> <li>Determine metabolic rates</li> </ul>	10	4	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3, 11-12.4 A-SSE: 4 LS: LS1, LS1.A, LS1.B <b>CTE Anchor:</b> Communications: 2.7, 2.8 Problem Solving and Critical Thinking: 5.1, 5.5 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.4, B2.2, B2.1, B2.3, B3.1, B3.2, B4.4, B5.1, B5.2, B7.2
<b>XI.</b>	<b>ENDOCRINE SYSTEM</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Identify components of the endocrine system and their normal functioning</li> <li>Identify disorders of the pituitary, thyroid, and parathyroid, including physiology, manifestations, and management</li> <li>Identify adrenal and pancreatic endocrine disorders, including etiology, manifestations, and management</li> <li>Describe diabetes mellitus, including its physiology, effects, manifestations, and management</li> <li>Identify common tests of endocrine system functioning</li> <li>Measure blood glucose levels using a glucometer</li> </ul>	10	4	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3, 11-12.4 LS: LS1.B, LS1.A, LS1 <b>CTE Anchor:</b> Communications: 2.7, 2.8 Problem Solving and Critical Thinking: 5.5 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.3, B2.4, B2.1, B2.2, B4.4, B5.1, B5.6, B7.2
<b>XII.</b>	<b>GENITOURINARY SYSTEM</b>	<b>CR</b>	<b>Lab/ CC</b>	<b>Standards</b>

	<ul style="list-style-type: none"> <li>• Identify the anatomy of the female reproductive system</li> <li>• Identify anatomy of the male reproductive system</li> <li>• Identify gynecologic disorders and treatments</li> <li>• Identify male reproductive disorders and treatments</li> <li>• Understand measures of renal function</li> <li>• Identify pathology of the urinary tract</li> <li>• Identify both primary and secondary renal disease</li> <li>• Measure pH and specific gravity of urine</li> </ul>	12	0	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3 A-REI: 1 LS: LS1, LS1.A, LS1.B <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.5, 5.6 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.1, B2.4, B2.2, B2.3, B3.1, B3.2, B4.4, B5.6, B5.1, B7.2
<b>XIII.</b>	<b>MENTAL HEALTH DISEASES AND DISORDERS</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Discuss mental health care concepts/theories</li> <li>• Outline the historical progress of mental health care</li> <li>• Identify major mental health diseases, disorders, and treatment</li> </ul>	4	1	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.4 LS: LS1.B, LS1, LS1.A, LS1.D <b>CTE Anchor:</b> Communications: 2.7, 2.8 Problem Solving and Critical Thinking: 5.1, 5.2, 5.4, 5.5, 5.6 Health and Safety: 6.6 Technical Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B2.3, B2.4, B2.1, B2.2, B4.4, B5.6, B5.1, B7.2
<b>XIV.</b>	<b>HEALTH MAINTENANCE</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>• Describe the role of the major food groups in maintaining human health</li> <li>• Understand the specific role of vitamins and minerals in human physiology</li> <li>• Understand the physiological effects of exercise on body systems, and identify the benefits of exercise</li> <li>• Identify environmental factors affecting human physiology</li> <li>• Identify common carcinogens</li> <li>• Identify other common toxins and their effects</li> <li>• Design an individual health maintenance/improvement plan</li> <li>• Understand the importance of maintaining personal health records</li> </ul>	5	1	<b>Academic:</b> LS: 11-12.1, 11-12.2 RLST: 11-12.1, 11-12.2, 11-12.3, 11-12.4 PS: PS1, PS1.B LS: LS1.A, LS1, LS1.B, LS1.C <b>CTE Anchor:</b> Technical

				Knowledge and Skills: 10.1 <b>CTE Pathway:</b> B1.2, B2.1, B2.4, B2.2, B2.3, B6.6, B9.4, B9.5, B9.6, B9.1, B9.2, B9.3
<b>XV.</b>	<b>EMPLOYMENT LITERACY</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<ul style="list-style-type: none"> <li>Identify available positions in the industry through the use of networking or the Internet</li> <li>Complete an application form correctly</li> <li>Prepare a written resume</li> <li>Participate in a simulated employment interview</li> <li>Prepare a portfolio</li> <li>Research internship and externship opportunities</li> </ul>	10	0	<b>Academic:</b> LS: 11-12.1, 11-12.2 <b>CTE Anchor:</b> Communications: 2.4 Career Planning and Management: 3.1, 3.2, 3.4, 3.5, 3.9 <b>CTE Pathway:</b> B12.1, B12.2
<b>XVI.</b>	<b>EMPLOYABILITY SKILLS AND SOFT SKILLS DEVELOPMENT</b>	<b>CR</b>	<b>Lab/CC</b>	<b>Standards</b>
	<p><b>PERSONAL SKILLS:</b></p> <ul style="list-style-type: none"> <li>Demonstrate promptness and attend class regularly</li> <li>Develop and maintain acceptable working relations</li> <li>Demonstrate the ability to manage time wisely</li> <li>Demonstrate a positive and cooperative attitude</li> <li>Demonstrate values of honesty and integrity</li> <li>Demonstrate respect for others</li> <li>Dress in a professional manner according to industry standards</li> <li>Demonstrate appropriate personal hygiene/grooming and dress</li> <li>Demonstrate responsibility by exerting a high level of effort and working toward a goal</li> </ul> <p><b>INTERPERSONAL SKILLS/GROUP DYNAMICS:</b></p> <ul style="list-style-type: none"> <li>Demonstrate the ability to work as a member of a team Identify proper procedures for handling harassment</li> <li>Demonstrate leadership skills by working independently, making appropriate decisions, working well with others, and accepting constructive criticism</li> <li>Demonstrate the ability to accept and work with individuals from various cultures</li> </ul> <p><b>THINKING AND PROBLEM SOLVING:</b></p> <ul style="list-style-type: none"> <li>Utilize problem-solving techniques</li> <li>Understand logical reasoning</li> <li>Demonstrate creative thinking</li> <li>Discuss decision-making</li> <li>Demonstrate the ability to interpret information correctly</li> </ul> <p><b>COMMUNICATIONS SKILLS:</b></p> <ul style="list-style-type: none"> <li>Demonstrate effective verbal and written skills</li> <li>Read technical journals, and write technical reports using appropriate terminology</li> <li>Listen attentively, follow directions, and relay directions to others</li> <li>Demonstrate the ability to research and retrieve information</li> </ul>	12	0	<b>Academic:</b> LS: 11-12.1, 11-12.2 <b>CTE Anchor:</b> Communications: 2.3, 2.5, 2.7, 2.8 Technology: 4.1, 4.2, 4.3 Problem Solving and Critical Thinking: 5.1, 5.2 Responsibility and Flexibility: 7.3, 7.7 Ethics and Legal Responsibilities: 8.2, 8.3, 8.4 Leadership and Teamwork: 9.2, 9.3 <b>CTE Pathway:</b> B4.5, B5.1, B12.2, B12.1, B13.5