

CTAN Name: Introduction to Exercise Science

This document contains information about two Career-Technical Articulation Numbers (CTANs) for the Exercise Science and Sports and Recreational Health Care Career-Technical Assurance Guide (CTAG). The first CTAN is:

- 1. Introduction to Exercise Science:** CTAN alignment with the Tech Prep Exercise Science/Sport and Recreational Health Care Pathway in the Career Field Technical Content Standards of the Ohio Department of Education.

Course Description: This course is the introduction to exercise science and the sub-disciplines. It is designed to help students define professional goals and explore the many careers in exercise science. Students will begin to gain the competencies essential and the commitment required to be in the field of exercise science.

Semester Credit Hours: 3

Alignment:

All learning outcomes are considered essential and are marked with an asterisk*.

Learning Outcomes	Competencies in ODE’s Revised Career Field Technical Content Standards
The student will be able to: 1. Identify and define the basic concepts of physical activity, fitness and wellness.*	3.2.1 Describe the national and state health agenda for wellness. 3.2.5 Communicate relevant information to promote, maintain and restore overall wellness. 3.2.7 Identify the components of wellness.
2. Identify potential career opportunities, educational requirements, and certifications in exercise science and the sub-disciplines.*	1.1.1 Identify the knowledge, skills and abilities necessary to succeed in careers. 1.3.3 Use ethical character traits consistent with workplace standards (e.g., honesty, personal integrity, compassion, justice).

	<p>1.3.4 Identify how federal and state consumer protection laws affect products and services.</p> <p>3.2.1 Describe the national and state health agenda for wellness</p>
<p>3. Identify professional organizations, journals and best practices that support the profession.*</p>	<p>1.1.4 Describe the role and function of professional organizations, industry associations, and organized labor and use networking techniques to develop and maintain professional relationships.</p> <p>1.3.1 Analyze how regulatory compliance affects business operations and organizational performance.</p> <p>3.2.5 Communicate relevant information to promote, maintain and restore overall wellness.</p>
<p>4. Investigate the skills and knowledge essential for a practitioner in the field of exercise science.*</p>	<p>1.1.2 Identify the scope of career opportunities and the requirements for education, training, certification, licensure, and experience.</p> <p>1.1.6 Explain the importance of work ethic, accountability, and responsibility and demonstrate associated behaviors in fulfilling personal, community and workplace roles.</p> <p>1.1.8 Identify the correlation between emotions, behavior, and appearance and manage those to establish and maintain professionalism.</p> <p>1.1.12 Identify healthy lifestyles that reduce the risk of chronic disease, unsafe habits, and abusive behavior.</p> <p>1.2.8 Identify the strengths, weaknesses, and characteristics of leadership styles that influence internal and external workplace relationships.</p> <p>3.2.1 Describe the national and state health agenda for wellness</p>
<p>5. Utilize effective communication skills to present scholarly physical activity, fitness and wellness topics.*</p>	<p>1.2.1 Extract relevant, valid information from materials and cite sources of information (e.g., medical reports, fitness assessment, medical test results).</p> <p>1.2.2 Deliver formal and informal presentations.</p>

	<p>1.2.3 Identify and use verbal, nonverbal, and active listening skills to communicate effectively.</p> <p>1.2.6 Use proper grammar and expression in all aspects of communication.</p> <p>1.2.9 Identify advantages and disadvantages involving digital and/or electronic communications.</p> <p>1.2.10 Use interpersonal skills to provide group leadership, promote collaboration and work in a team.</p>
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CTAN Name: Fitness and Health Foundations

2. Fitness and Health Foundations: CTAN alignment with the Tech Prep Exercise Science/Sport and Recreational Health Care Pathway in the Career Field Technical Content Standards of the Ohio Department of Education.

Semester Credit Hours: 3

Course Description: This course is an introduction to the foundations of fitness, health and related topics including energy balance, lifestyle choices and exercise testing and prescription. Individual fitness assessment, evaluation and programming will be emphasized. Attention will be given to the research that supports the professional guidelines for fitness and health.

Alignment:

All learning outcomes are considered essential and are marked with an asterisk*.

Learning Outcomes	Competencies in ODE’s REVISED Career Field Technical Content Standards
The student will be able to:	
1. Identify and define the components of physical fitness.*	3.2.2 Measure and classify body composition, neuromuscular flexibility, agility, balance, coordination and proprioception.

	3.2.3 Measure and classify an individual's cardiorespiratory fitness, muscular strength, endurance and power.
<p>2. Evaluate and assess cardiorespiratory fitness, muscular strength, muscular endurance, flexibility, body composition and learn to determine appropriate recommendations.*</p>	<p>2.1.3 Describe the structures and functions of the cardiovascular system and trace the path of blood and identify factors affecting blood flow.</p> <p>2.1.4 Describe how blood pressure is controlled and identify factors influencing changes in blood pressure.</p> <p>2.1.5 Describe the structures and functions of the respiratory system.</p> <p>2.1.7 Describe the structures and functions of the musculoskeletal system.</p> <p>3.5.10 Measure and classify based on anthropometric measurements.</p> <p>3.6.1 Complete a comprehensive fitness evaluation.</p> <p>3.6.13. Apply the FITT principle (i.e., frequency, intensity, time, type) to health and skill conditioning activities.</p>
<p>3. Design and implement an exercise prescription for cardiorespiratory fitness, muscular strength, muscular endurance, and flexibility for personal use by utilizing basic exercise physiology and basic anatomy.*</p>	<p>3.6.3 Design and implement an individualized training program (e.g., by using interval, continuous, and circuit training techniques).</p> <p>3.6.5 Apply techniques to enhance neuromuscular flexibility, muscle strength, endurance and flexibility.</p>

<p>4. Analyze the relationship between nutrition, good health and well-being.*</p>	<p>3.2.1 Describe the national and state health agenda for wellness.</p> <p>3.2.5 Communicate relevant information to promote, maintain and restore overall wellness.</p> <p>3.2.7 Identify the components of wellness.</p>
<p>5. Describe lifestyle factors that may impact weight management and healthy behaviors.*</p>	<p>3.5.2 Calculate the energy of carbohydrates, proteins, and fats.</p> <p>3.5.3 Describe ergogenic aids and possible benefits and risks.</p> <p>3.5.4 Calculate caloric needs of the individual and refer the individual to nutritional resources for optimal health and performance.</p> <p>3.5.5 Provide diet and hydration guidelines to maintain optimal health.</p> <p>3.6.4 Calculate the differences in caloric costs between various exercise protocols (e.g., cardio versus resistance training, large versus small muscle groups).</p>