

**STATE UNIVERSITY OF NEW YORK  
COLLEGE OF TECHNOLOGY  
CANTON, NEW YORK**



**COURSE OUTLINE**

**HEFI 408 – Exercise Prescription for Special Populations**

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**SCHOOL OF SCIENCE, HEALTH, AND CRIMINAL JUSTICE  
HEALTH & FITNESS PROMOTION  
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- A. **TITLE:** Exercise Prescription for Special Populations
- B. **COURSE NUMBER:** HEFI 408
- C. **CREDIT HOURS:** 4
- D. **WRITING INTENSIVE COURSE:** No
- E. **COURSE LENGTH:** 15 weeks
- F. **SEMESTER(S) OFFERED:** Spring
- G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**  
3 hours of lecture, 2 hours of laboratory per week
- H. **CATALOG DESCRIPTION:** Students acquire the knowledge and skills to assess the physical fitness of individuals with special needs. Focus of the course is on how to assess the four components of physical fitness: cardiorespiratory fitness, muscular fitness, body composition, and flexibility in patients/clients who have special needs. Hands-on training in assessment and exercise prescription for these four components is included during laboratory sessions. Special needs populations include: pregnancy, heart disease, cancer, diabetes, obesity, poor psychological health, osteoporosis, arthritis, the older adult, children and adolescents, neurological conditions, metabolic disorders, etc.
- I. **PRE-REQUISITES/CO-REQUISITES:** Pre-requisite(s): HEFI 401 and HEFI 402
- J. **GOALS (STUDENT LEARNING OUTCOMES):**

By the end of this course, the student will be able to:

<b><i>Course Objective</i></b>	<b><i>Institutional SLO</i></b>
a. Identify the essential elements of physical fitness testing and exercise prescription for each of the special populations discussed.	<b>3. Prof. Competence</b>
b. Describe the pathophysiological considerations of each of the various pathologies.	<b>1. Communication 2. Crit. Thinking 3. Prof. Competence</b>
c. Compare and contrast various tests used to assess cardiorespiratory fitness, muscular fitness, body composition and flexibility for each of the special populations discussed.	<b>2. Crit. Thinking 3. Prof. Competence</b>
d. Explain absolute and relative contraindications for exercise testing and prescription for each of the special populations.	<b>1. Communication 2. Crit. Thinking 3. Prof. Competence</b>
e. Accurately assess cardiorespiratory fitness, muscular fitness, body composition, and flexibility using standard, evidence-based tests for each of the special populations discussed.	<b>2. Crit. Thinking 3. Prof. Competence</b>
f. Design and implement a comprehensive exercise program addressing the four components of physical fitness based on assessment of an individual with special needs.	<b>1. Communication 2. Crit. Thinking 3. Prof. Competence 4. Inter-intrapersonal</b>

g. Adapt training guidelines to meet the needs of children, older adults, and/or individuals of a special population who are seeking advanced strength training.	<b>1. Communication</b> <b>2. Crit. Thinking</b> <b>3. Prof. Competence</b> <b>4. Inter-intrapersonal</b>
h. Evaluate the effectiveness of a prescribed exercise program for an individual of a special population, and make appropriate modifications based on the evaluation.	<b>1. Communication</b> <b>2. Crit. Thinking</b> <b>3. Prof. Competence</b> <b>4. Inter-intrapersonal</b>

**K. TEXTS:**

Nieman, David. Exercise Testing and Prescription: A Health Related Approach. New York: McGraw-Hill, 2011.

American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription. Philadelphia: Lippincott Williams & Wilkins, 2014.

**L. REFERENCES:**

Williamson, Peggie. Exercise for Special Populations, Philadelphia: Lippincott Williams & Wilkins, 2011.

**M. EQUIPMENT:** Metabolic cart for exercise assessment. Exercise equipment available in the fitness center will be used for lab sessions. Basic assessment tools from the PTA/HEFI laboratory or the athletic department will also be utilized. (i.e. blood pressure cuffs, body composition tools).

**N. GRADING METHOD: A-F**

**O. MEASUREMENT CRITERIA/METHODS:**

- Quizzes
- Lab practicals
- Written homework assignments
- Exercise program design and evaluation report/presentation

**P. DETAILED COURSE OUTLINE:**

- I. Cardiovascular Disease
  - a. Pathologies
  - b. Trends
  - c. Risk factors
  - d. Treatment, prevention, and exercise testing/prescription
- II. Cancer
  - a. Pathology
  - b. Trends
  - c. Risk factors
  - d. Treatment, prevention, and exercise testing/prescription
- III. Diabetes
  - a. Pathology
  - b. Trends

- c. Risk factors
  - d. Treatment, prevention, and exercise testing/prescription
- IV. Obesity
  - a. Pathology
  - b. Trends
  - c. Risk factors
  - d. Treatment, prevention, and exercise testing/prescription
- V. Osteoporosis
  - a. Pathology
  - b. Trends
  - c. Risk factors
  - d. Treatment, prevention, and exercise testing/prescription
- VI. Pregnancy
  - a. Physiological considerations
  - b. Special considerations
  - c. Exercise testing and prescription
- VII. Low Back Pain
  - a. Pathology
  - b. Trends
  - c. Risk factors
  - d. Treatment, prevention, and exercise testing/prescription
- VIII. Arthritis
  - a. Pathology
  - b. Trends
  - c. Risk factors
  - d. Treatment, prevention, and exercise testing/prescription
- IX. Fibromyalgia
  - a. Pathology
  - b. Diagnosis
  - c. Special considerations
  - d. Exercise testing and prescription
- X. Intellectual Disability and Down Syndrome
  - a. Pathologies
  - b. Special considerations
  - c. Exercise testing and prescription
- XI. Psychological health
  - a. Pathologies
  - b. Effects of stress on mental/physical health
  - c. Stress management principles
  - d. How physical activity helps psychological health
- XII. Amputees
  - a. Pathologies
  - b. Special considerations
  - c. Exercise testing and prescription

- XIII. Neurological Conditions
  - a. Pathologies: Cerebral palsy, multiple sclerosis, Parkinson disease, spinal cord injury
  - b. Special considerations
  - c. Exercise testing and prescription
- XIV. Children and Adolescents
  - a. Physiological considerations
  - b. Special considerations
  - c. Exercise testing and prescription
- XV. Aging Adult
  - a. The aging process
  - b. Health habits and aging
  - c. Exercise and aging
  - d. Physical activity and life expectancy
  - e. Exercise testing and prescription

**Q. LABORATORY OUTLINE:**

- I. Cardiovascular Disease
  - a. Exercise Testing
  - b. Exercise Prescription
- II. Cancer
  - a. Exercise Testing
  - b. Exercise Prescription
- III. Diabetes
  - a. Exercise Testing
  - b. Exercise Prescription
- IV. Obesity
  - a. Exercise Testing
  - b. Exercise Prescription
- V. Osteoporosis
  - a. Exercise Testing
  - b. Exercise Prescription
- VI. Pregnancy
  - a. Exercise Testing
  - b. Exercise Prescription
- VII. Low Back Pain
  - a. Exercise Testing
  - b. Exercise Prescription
- VIII. Arthritis
  - a. Exercise Testing
  - b. Exercise Prescription
- IX. Fibromyalgia
  - a. Exercise Testing
  - b. Exercise Prescription
- X. Intellectual Disability and Down Syndrome
  - a. Exercise Testing
  - b. Exercise Prescription
- XI. Psychological Health

- a. Exercise Testing
- b. Exercise Prescription
- XII. Amputees
  - a. Exercise Testing
  - b. Exercise Prescription
- XIII. Neurological Conditions
  - a. Exercise Testing
  - b. Exercise Prescription
- XIV. Children and Adolescents
  - a. Exercise Testing
  - b. Exercise Prescription
- XV. Aging Adult
  - a. Exercise Testing
  - b. Exercise Prescription