

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



MASTER SYLLABUS

**COURSE NUMBER: EXSC 411
COURSE TITLE: Exercise Prescription**

CIP Code: 31.0505

Created by: Dr. Janet L. Parcell

**School: School of Science, Health, and Criminal Justice
Department:
Implementation Semester/Year: Spring 2028**

A. COURSE TITLE: Exercise Prescription

B. COURSE NUMBER: EXSC 411

C. CREDIT HOURS (# Hours of Lecture, Laboratory, Recitation, Clinical):

# Credit Hours per Week	2
# Lecture Hours per Week	1
# Lab Hours per Week	2
Other per Week	

D. GRADING METHOD:

A – F	<input checked="" type="checkbox"/>
Pass/Fail	<input type="checkbox"/>
Other:	

E. WRITING INTENSIVE COURSE:

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

F. GER CATEGORY:

Does the course satisfy a GER category? If so, please select all that apply.

[\(https://www.canton.edu/provost/assessment/ger/\)](https://www.canton.edu/provost/assessment/ger/)

[1-2] Communication	<input type="checkbox"/>
[3] Diversity: Equity, Inclusion & Social Justice	<input type="checkbox"/>
[4] Mathematics & Quantitative Reasoning	<input type="checkbox"/>
[5] Natural Science & Scientific Reasoning	<input type="checkbox"/>
[6] Humanities	<input type="checkbox"/>
[7] Social Sciences	<input type="checkbox"/>
[8] Arts	<input type="checkbox"/>
[9] US History & Civic Engagement	<input type="checkbox"/>
[10] World History & Global Awareness	<input type="checkbox"/>
[11] World Languages	<input type="checkbox"/>

CORE COMPETENCIES (Required starting in Fall 2026):

[12] Critical Thinking and Reasoning	<input checked="" type="checkbox"/>
[13] Information Literacy	<input type="checkbox"/>
[14] Civic Discourse	<input type="checkbox"/>

G. APPLIED LEARNING COMPONENT (High-Impact Practices):

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

If Yes, select [X] one or more of the following Curricular Attribute categories:
HIPs definitions found here: <https://www.suny.edu/applied-learning/resources/>

Capstone	
Creative Works	<input type="checkbox"/>
For-Credit Internship	<input type="checkbox"/>
Practicum	
Practicum [Clinical Placement]	<input type="checkbox"/>
Practicum [Non-Clinical Placement]	<input checked="" type="checkbox"/>
Research & Field Study	
Field Research	<input type="checkbox"/>
Research	<input type="checkbox"/>
Undergraduate Research	<input type="checkbox"/>
Service or Community	
Service Learning	<input type="checkbox"/>
Community Service	<input type="checkbox"/>
Civic Engagement	<input type="checkbox"/>
Study Abroad	
International and Domestic Travel/Exchange	<input type="checkbox"/>
COIL	<input type="checkbox"/>

H. SEMESTER(S) OFFERED:

Fall	<input type="checkbox"/>
Spring	<input checked="" type="checkbox"/>
Fall and Spring	<input type="checkbox"/>

I. COURSE DESCRIPTION:

Students acquire the knowledge and skills to use their knowledge of assessment of the physical fitness of apparently healthy individuals to then prescribe them exercise. Focus of the course is on prescribing proper exercise using the FITT-VP principles of exercise prescription (frequency, intensity, time, type, volume, progression) regarding the four components of physical fitness: cardiorespiratory fitness, muscular fitness, body composition, and flexibility. Hands-on training in exercise prescription for these four components is included during laboratory sessions.

J. PRE-REQUISITES: EXSC 401

CO-REQUISITES: NONE

K. LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	Program Student Learning Outcome [PSLO]	GER	ISLO & Subsets
a. Demonstrate a thorough understanding of the physiological principles underlying exercise prescription, including how exercise influences different body systems (muscular, cardiovascular, metabolic, etc.).	1	-	1 [O,W]
b. Describe the key components of a personalized exercise program, including frequency, intensity, time, and type (FITT).	1	-	1 [O, W]
c. Identify specific goals and objectives based on a client's individual health, fitness level, and personal preferences.	6	-	4 [T, IK]
d. Tailor exercise prescriptions to meet the needs of individuals based on their fitness assessments and goals (e.g., weight loss, muscle gain, cardiovascular health).	5 3	-	5 2
e. Implement strategies to monitor clients' progress and adapt exercise programs based on their responses (e.g., improving performance, overcoming plateaus, or addressing injuries).	2	-	4 [ER]

KEY	Institutional Student Learning Outcomes [ISLO 1 – 5]
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL],</i>

	<i>Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

KEY	Program Student Learning Outcomes [PSLO] https://www.canton.edu/sci_health/hefi/outcomes.html
PSLO #	PSLO & Subsets
1	Communication Skills
2	Social Responsibility
3	Critical Thinking
4	Professional Competencies

L. TEXTS:

ACSM’s Guidelines for Exercise Testing and Prescription 12th Ed., ACSM 2025.

ACSM’s Exercise Testing and Prescription, 2nd Ed., Bayles, Madeline Paternostro, Human Kinetics, IL 2023.

M. SUGGESTED INSTRUCTIONAL MATERIALS:

ACSM’s Resource Manual for Guidelines for Exercise Testing and Prescription, 7th Ed., ACSM, Human Kinetics, IL 2013.

N. EQUIPMENT:

Metabolic cart for exercise assessment. Exercise equipment available in the fitness center and/or the EXSC/PHTA lab will be used for lab sessions. Basic assessment tools from the EXSC/PHTA laboratory will also be utilized (i.e. blood pressure cuffs, body composition tools, etc.)

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Quiz	<input checked="" type="checkbox"/>
Exam: practical	<input checked="" type="checkbox"/>
Assignment	<input checked="" type="checkbox"/>
Other:	<input type="checkbox"/>

P. DETAILED COURSE OUTLINE:

I. Introduction to Exercise Prescription

- A. Overview of exercise prescription and its importance
- B. Key components of exercise prescription (FITT-VP: Frequency, Intensity, Time, Type, Volume, Progression)
- C. The role of physical activity in health promotion and disease prevention
- D. Ethical considerations and safety guidelines

II. Designing Exercise Programs for Healthy Populations

- A. Assessing individual needs and setting SMART goals (Specific, Measurable, Achievable, Relevant, Time-bound)
- B. Creating personalized programs for cardiovascular, strength, and flexibility training
- C. Progression and variation in exercise routines
- D. Adapting the program to different fitness levels

III. Exercise Prescription for Older Adults

- A. Age-related physiological changes and implications for exercise
- B. Balancing aerobic, strength, and flexibility exercises in older adults
- C. Preventing falls and enhancing mobility
- D. Special considerations for chronic conditions (e.g., osteoarthritis, hypertension)

IV. Exercise Prescription for Special Populations

- A. Chronic disease management (e.g., diabetes, cardiovascular disease, asthma)
- B. Exercise considerations for obesity and metabolic syndrome
- C. Modifications for pregnancy and postpartum women
- D. Pediatric exercise prescription: developmentally appropriate activities

V. Exercise Prescription for Performance Enhancement

- A. Principles of periodization and progressive overload
- B. Training for strength, power, endurance, and flexibility
- C. Program design for athletes: sport-specific adaptations
- D. Recovery strategies and preventing overtraining

VI. Advanced Exercise Techniques and Modalities

- A. High-intensity interval training (HIIT), circuit training, and functional training
- B. Resistance training techniques and periodization
- C. Use of emerging fitness technologies (e.g., wearables, virtual coaching)
- D. Nutritional considerations to support exercise performance

VII. Monitoring and Evaluating Progress

- A. Tools for tracking progress (e.g., fitness assessments, exercise logs, wearable devices)
- B. Adjusting the exercise prescription based on feedback and results
- C. Long-term adherence strategies
- D. Evaluating client satisfaction and outcomes

VIII. Case Studies and Real-World Application

- A. Analyzing real-life case studies and applying exercise prescription concepts
- B. Working with clients with complex health profiles
- C. Peer feedback and program evaluations
- D. Group discussions and problem-solving exercises

Q. LABORATORY OUTLINE:

I. Review and Interpretation of Fitness Assessments

- A. Conducting a basic health screening and fitness assessment
 - o Heart rate, blood pressure, and BMI
 - o Aerobic fitness testing (e.g., 1-mile walk test)
 - o Muscular endurance (push-ups, sit-ups)
 - o Flexibility testing (e.g., sit-and-reach test)
- B. Aerobic and Muscular Fitness Testing
 - o VO₂max testing protocols (submaximal vs. maximal testing)
 - o Body composition analysis using skinfold calipers and bioelectrical impedance

- Muscular strength testing (e.g., 1RM for bench press, squat)
 - Post-exercise recovery monitoring (heart rate, blood pressure)
- II. Designing Exercise Programs for Healthy Individuals**
 - A. Developing a personalized aerobic exercise prescription
 - B. Creating a strength training program
 - C. Writing a flexibility program
 - D. Progression strategies for each component
- III. Adaptations for Special Populations**
 - A. Modifying exercise prescriptions for older adults
 - B. Designing low-impact exercise routines for individuals with chronic conditions (e.g., hypertension, diabetes)
 - C. Creating prenatal and postpartum exercise plans
 - D. Exercise prescription for children and adolescents
- IV. High-Intensity Interval Training (HIIT)**
 - A. Demonstrating and performing a HIIT workout
 - B. Understanding the benefits and risks of HIIT
 - C. Modifying HIIT for different fitness levels and populations
 - D. Designing a safe and effective HIIT program
- V. Behavioral Strategies for Exercise Adherence**
 - A. Learning how to assess client motivation
 - B. Using behavior change techniques to increase adherence (e.g., goal setting, self-monitoring)
 - C. Role-playing client interactions
 - D. Motivational interviewing techniques
- VI. Recovery and Injury Prevention**
 - A. Understanding the role of recovery in exercise programs
 - B. Teaching proper stretching techniques
 - C. Using foam rolling, massage, and other recovery strategies
 - D. Preventing common exercise injuries through proper technique
- VII. Group Exercise and Instruction Techniques**
 - A. Leading a group exercise session (e.g., circuit training, aerobics)
 - B. Demonstrating effective cueing and form corrections
 - C. Managing group dynamics and fostering engagement
 - D. Modifying exercises for different fitness levels
- VIII. Capstone Lab – Program Design**
 - A. Working in small groups to design an exercise prescription for a specific case study
 - B. Presenting the program to the class with a rationale
 - C. Receiving peer and instructor feedback
 - D. Refining and finalizing the program