

**Maple Tree University:
Exercise Oncology Instructor Certification and Course Training**

Course Description:

The course will provide critical content information and practical application that will prepare individuals to design and conduct exercise intervention programs for cancer patients. The physiological alterations that occur during and following cancer therapy and the effects that exercise has on eliminating or reducing these effects will be presented.

Course Objective:

Provide the opportunity for students to develop comprehensive knowledge and skills regarding the components of cancer, cancer treatments, the physiological alterations that result from cancer treatments, and the concepts of rehabilitating cancer patients from cancer treatment related symptoms using exercise interventions.

Student Objectives:

1. Demonstrate a thorough knowledge of the concepts of cancer treatment related effects, exercise physiology, and exercise programs presented throughout the course.
2. Demonstrate proficiency in the application of this content through case studies.
3. Understand specific concerns associated with exercising cancer patients.
4. Be able to perform the necessary calculations involved in the assessments, exercise program development and prescription intervention.
5. Be able to perform a physical assessment and analyze an exercise prescription.
6. Be able to design and implement exercise interventions in cancer rehabilitation programs.

Required Textbook: Wonders, K. Y. (2022). Exercise Oncology Instructor: Principles and Practice. Maple Tree Cancer Alliance.

Course Outline:

Week 1: Foundations (*Textbook Chapter 1-2*)

Lectures:

- Introduction
- Cancer Overview
 - Risk Factors for Cancer
 - Basic Cancer Terminology
 - Cancer Staging and Grading
 - Cancer Treatments

- Common Side Effects of Cancer Treatments
- Special Topics
 - Breast Cancer Overview
 - Prostate Cancer Overview
 - Lung Cancer Overview
 - Colon Cancer Overview
 - Pediatric Oncology Overview

Assignments:

- Test Your Knowledge
- Vocabulary Terms

Week 2: Basic Exercise Physiology (*Textbook Chapter 3.1-3.9*)

Lectures:

- Exercise Physiology 101
 - Cellular Respiration
 - Neuromuscular Physiology
- Exercise Training Principles
 - Exercise Training Principles
 - Cardiorespiratory Physiology
 - Resistance Training
 - Flexibility Training
 - Balance Training

Assignments:

- Treatment Toxicities

Week 3: Exercise Testing Procedures (*Textbook Chapter 3.10*)

Lectures:

- Introduction to MTCA System of Exercise
 - Maple Tree Phase System
 - Patient Pathway
- Comprehensive Fitness Assessment
 - What is a Fitness Assessment?
 - Why is a Fitness Assessment Important/Initial Fitness Assessment Guideline
 - Pre-Participation Paperwork
 - Resting Values
 - Fitness Assessment Body Composition
 - Posture and Balance Tests
 - Circumference and Range of Motion Tests
 - Cardiorespiratory Fitness
 - Muscular Strength
 - Muscular Endurance

- Flexibility Tests

Assignments:

- Skinfold Metabolic Equations/Interpreting Results
- Interpreting Norm Charts from Musculoskeletal Tests
- Interpreting Mock Fitness Center Data and Setting Appropriate Goals

Week 4: Cancer Exercise Programming (*Textbook 3.11-3.14*)

Lectures:

- Exercise Programming
 - Exercise Prescription
 - Current ACSM Guidelines for Exercise Oncology
 - How to Get Started
 - Principles of FIIT
 - Safety Considerations and Contraindications to Exercise
 - Exercise Programming
 - Aerobic Exercise, Resistance Training, Flexibility and Balance Exercises
 - Resistance Training – General Program Design
 - Special Topics
 - Lung Cancer
 - Breast Cancer
 - Prostate Cancer
 - Colon Cancer
- Preparing for the EOI Certification
 - Preparing for the EOI Certification, How are Certificates Awarded, and Staying Up-to-Date

Assignments:

- Program Design Assignment

Course Evaluation:

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| 1. | Final comprehensive exam | 35% |
| 2. | Laboratory practical exam and notebook | 40% |
| 3. | Case Study Analysis | 25% |

Case studies will require students to analyze assessments, exercise prescriptions, design exercise interventions, modify exercise programs, and respond to management and safety issues.