

## **NAT261 Principles of Health and Fitness Training**

**(3 credit hours)**

### **Course Syllabus**

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#### **Course Description**

This course is available to all Tiffin University students and will introduce students to the principles and processes of exercise testing prescription. Students will be introduced to pre-participation health screenings, pre-exercise evaluation, the American College of Sports Medicine's pre-participation screening algorithm, exercise testing techniques to assess cardiorespiratory and muscular fitness, and the principles of exercise prescription. At the conclusion of this course, students will be prepared for the American College of Sports Medicine's Certified Personal Training Examination.

#### **Course Learning Outcomes**

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

1. Assess the need for clients to receive medical clearance prior to exercise testing and training in accordance with the American College of Sports Medicine's Pre-Participation Screening Algorithm.
2. Utilize medical and exercise history and blood chemistry to assess clients' cardiovascular disease risk.
3. Plan, conduct, and interpret age- and goal-specific pre-exercise evaluations.
4. Plan, conduct, and interpret age- and goal-specific fitness tests that assess cardiorespiratory endurance, muscular strength and endurance, body composition, and flexibility.
5. Correctly interpret exercise and fitness test data to design safe and effective exercise programs in accordance with the American College of Sports Medicine's FITT-VP principle.
6. Read clinical exercise test results to determine the presence of underlying atherosclerotic plaque disease of the coronary arteries.
7. Read clinical exercise test data to provide five-year prognoses.

8. Modify fitness tests and exercise prescriptions for persons with diabetes mellitus and obesity, older adults, children, persons with low back pain, and pregnant clients.
9. Explain how exercise can manage or prevent cardiometabolic diseases such as type II diabetes mellitus, coronary artery disease, hypertension, and obesity.
10. Explain theories of weight loss using knowledge of bioenergetics, caloric expenditure, glucose metabolism, and insulin responses to food consumption.

## Prerequisites/Corequisites

N/A

## Required Textbook(s) and Resources

For this course you will need to obtain the following materials:

- Liguori, G. (2021). *ACSM's guidelines for exercise testing and prescription* (11th ed.). Wolters Kluwer Health.  
(A printed copy of your textbook is included with your DragonACCESS fees for this course. The book will be available to be shipped from the Tiffin bookstore approximately 2 weeks before the start of classes. You must contact the bookstore to confirm your shipping address.)
- Wilson, B. R. A., & McCabe, M. D. (2019). *Exercise prescription case studies for healthy populations*. Cognella Academic Publishing.  
(A digital copy of this textbook is included with your DragonACCESS fees for this course. Use the DragonACCESS tool in Moodle to view your book.)

If you plan to seek certification, you may also wish to purchase as a recommended reference:

- American College of Sports Medicine. (2022). *ACSM's certification review* (6th ed.). Wolters Kluwer Health.
- Be sure to also review the weekly **Explore** sections for additional library or web resources. For access to databases, research help, and writing tips, visit the [Tiffin University Library](#).

## Time Commitment

Effective time management is possibly the single most critical element to your academic success. To do well in this online class you should plan your time wisely to maximize your learning through the completion of readings, discussions, and assignments. Because of our accelerated, seven-week term, TU online courses are designed with the expectation that you dedicate a little over **six (6)** hours per credit hour to course activities and preparation **each**

**week.** For example, for successful completion of a three-credit, seven-week online course you should reserve roughly **twenty (20) hours per week.**

To help plan your time and keep on track toward successful course completion, note the distinctive rhythm of assignment due dates:

1. All times assume Eastern Time (GMT-4).
2. Weeks begin at 12:00 a.m. ET on Monday and end at 11:55 p.m. ET on Sunday.
3. Unless otherwise noted, initial assignments or discussion posts are due by **11:55 p.m. ET on Wednesdays.**
4. Additional assignments or follow-up discussion posts are due by **11:55 p.m. ET on Saturdays, and**
5. Major assignments and reflections are typically due by **11:55 p.m. ET on Sundays.**

### Learning Activities

Each week, you will complete (1) an application reflection, (2) end of chapter case studies, and (3) a quiz or exam over weekly content. Altogether, you will take five quizzes, a midterm examination at the end of Week 3, and a Final Exam at the end of Week 7. You will also create, as a final project, a professional presentation. Narrated and saved as a video, your presentation will “educate” professionals in the health and fitness industry on one special population or condition: obesity, dyslipidemia, osteoarthritis, pregnancy, children, back and neck pain, diabetes mellitus, or hypertension The presentation is due at the end of Week 7.

### Grading

The chart below identifies the individual contributions from each type of activity, per week.

Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
Weekly Application Reflections	50	50	50	50	50	50	50	<b>350</b>
Quizzes	20	20	--	20	20	20	--	<b>100</b>
End of Chapter Case Studies	52	34	15	30	32	27	60	<b>250</b>
Exams	--	--	50	--	--	--	150	<b>200</b>

Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
Final Project (Presentation)	--	--	--	--	--	--	100	<b>100</b>
<b>Total</b>	<b>122</b>	<b>104</b>	<b>115</b>	<b>100</b>	<b>102</b>	<b>97</b>	<b>360</b>	<b>1000</b>

## Grading Scale

A: 90-100% | B: 80-89% | C: 70-79% | D: 60-69% | F: <60%

## Course Outline and Weekly Checklist

Topic	Learning Activities (Due by 11:55 p.m. ET)
Start Here	<input type="checkbox"/> MON: Introduction (Forum)....Not Graded
Week 1: Pre-Exercise Screening	<input type="checkbox"/> WED: Activity 1.2: Application Reflection <input type="checkbox"/> SUN: Activity 1.3: End of Chapter Case Studies <input type="checkbox"/> SUN: Activity 1.4: Quiz 1
Week 2: Exercise Testing & Interpretation	<input type="checkbox"/> WED: Activity 2.1: Application Reflection <input type="checkbox"/> SUN: Activity 2.2: End of Chapter Case Studies <input type="checkbox"/> SUN: Activity 2.3: Quiz 2
Week 3: Metabolic Calculations	<input type="checkbox"/> WED: Activity 3.1: Application Reflection <input type="checkbox"/> SUN: Activity 3.2: End of Chapter Case Studies <input type="checkbox"/> SUN: Activity 3.3: Exam 1 (covering weeks 1-3)
Week 4: Cardiorespiratory Exercise Prescription	<input type="checkbox"/> WED: Activity 4.1: Application Reflection <input type="checkbox"/> SUN: Activity 4.2: End of Chapter Case Studies <input type="checkbox"/> SUN: Activity 4.3: Quiz 3
Week 5: Resistance Training and Flexibility Exercise	<input type="checkbox"/> WED: Activity 5.1: Application Reflection <input type="checkbox"/> SUN: Activity 5.2: End of Chapter Case Studies <input type="checkbox"/> SUN: Activity 5.3: Quiz 4
Week 6:	<input type="checkbox"/> WED: Activity 6.1: Application Reflection

Topic	Learning Activities (Due by 11:55 p.m. ET)
Special Considerations in Exercise Prescription	<input type="checkbox"/> SUN: Activity 6.2: End of Chapter Case Studies <input type="checkbox"/> SUN: Activity 6.3: Quiz 5
Week 7: Behavior Change & Comprehensive Review	<input type="checkbox"/> WED: Activity 7.1: Application Reflection <input type="checkbox"/> SUN: Activity 7.2: Special Populations Presentation <input type="checkbox"/> SUN: Activity 7.3: End of Chapter Case Studies <input type="checkbox"/> SUN: Activity 7.4: Final Exam

### Tips for Success

Online learning requires self-discipline and self-direction. As seekers of the truth, we should be willing to challenge one another's academic work in a spirit of respectful comradery. Your course is a place for you to grow as you benefit from the expertise, experience, and diverse perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge and understanding.

To get the most out of your learning experience, you should actively engage (participate) in **ALL** course activities. Course elements are arranged chronologically. To complete a week, simply work your way "down the page" through all of the course materials and activities.

### For More Information:

Be sure to review the [Support, Policies, and Procedures](#) addendum.