

**CEP575 Exercise Pharmacology**  
**(3 credit hours)**  
**Course Syllabus**

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### **Course Description**

This course involves the application of relevant pharmacological agents to common patient cases encountered by clinical exercise physiologists such as atherosclerotic plaque diseases, cardiac arrhythmias, emphysema, chronic bronchitis, hyperlipidemia, myalgia, depression, and osteoarthritis. Students will study pathophysiologic concepts and pharmacokinetic and pharmacodynamic principles and apply them to clinical situations in exercise physiology.

### **Course Learning Outcomes**

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

1. Explain the basic principles of pharmacology and pharmacotherapeutics.
2. Understand the difference between pharmacodynamics and pharmacokinetics.
3. Describe the most commonly prescribed agents in the major drug classes.
4. Explain the mechanism of action of the major drug classes.
5. Analyze and explain the adverse effect and drug interaction profiles of the major drug classes and individual drugs within these classes.
6. Make appropriate exercise related therapeutic decisions in the development of an individual patients training or rehabilitation.

### **Required Textbook(s) and Resources**

There are no required resources for this course. All course materials are included as links within the course.

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, forum posts, 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 posts are due by **11:55 p.m. ET on Wednesdays**.
4. Additional assignments or follow-up 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

In this course, you will use different activities to help you learn and apply the concepts. The activities build on each other week-by-week.

**Case Studies:** Each week, you will work on patient case studies with your classmates. You will look at a hypothetical patient and discuss how their medications could impact their exercise plan.

**Exercise Plan Reviews:** You will review example exercise plans. You will identify problems with the plans and suggest improvements. This builds your evaluation skills.

**Final Project:** At the end, you will design an exercise program for a simulated patient. You will use what you learned about medications to make the program.

## Grading

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

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
<b>Forum</b> Activity 1.1 (0) Activity 1.2 (60)	<b>Forum</b> Activity 2.1 (60)	<b>Forum</b> Activity 3.1 (60)	<b>Forum</b> Activity 4.1 (60)	<b>Forum</b> Activity 5.1 (60)	<b>Forum</b> Activity 6.1 (60)	<b>Forum</b> Activity 7.1 (60)	<b>420</b>
<b>Assignment</b> Activity 1.3 (80)	<b>Assignment</b> Activity 2.2 (80)	<b>Assignment</b> Activity 3.2 (80)	<b>Assignment</b> Activity 4.2 (80)	<b>Assignment</b> Activity 5.2 (80)	<b>Assignment</b> Activity 6.2 (80)	<b>Assignment</b> Activity 7.2 (100)	<b>580</b>
<b>140</b>	<b>140</b>	<b>140</b>	<b>140</b>	<b>140</b>	<b>140</b>	<b>160</b>	<b>1000</b>

## Grading Scale

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

## Course Schedule and Weekly Checklist

Topic	Learning Activities (Due by 11:55 p.m. ET on day designated)
Start Here	<input type="checkbox"/> MON: Activity 1.1: Meet Your Peers
Week 1: Basic Definitions Pharmacodynamics vs Pharmacokinetics Drug-Cell Interactions	<input type="checkbox"/> WED: Activity 1.1: Meet Your Peers – Follow-up Post (Optional) <input type="checkbox"/> WED: Activity 1.2: Case Study - Initial Post <input type="checkbox"/> SAT: Activity 1.2: Case Study - Follow-up Post <input type="checkbox"/> SUN: Activity 1.3: Exercise Prescription Analysis
Week 2: Blood Pressure Mechanisms Cardiovascular Medications Action Mechanisms	<input type="checkbox"/> WED: Activity 2.1: Case Study - Initial Post <input type="checkbox"/> SAT: Activity 2.1: Case Study - Follow-up Post <input type="checkbox"/> SUN: Activity 2.2: Exercise Prescription Analysis

<p>Week 3:</p> <p>Beta-2 Agonists</p> <p>COPD Management</p> <p>Mechanism of Action</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> WED: Activity 3.1: Case Study - Initial Post</li> <li><input type="checkbox"/> SAT: Activity 3.1: Case Study - Follow-up Post</li> <li><input type="checkbox"/> SUN: Activity 3.2: Exercise Prescription Analysis</li> </ul>
<p>Week 4:</p> <p>Cholesterol Role</p> <p>Lipid-Lowering Agents</p> <p>Mechanism of Action</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> WED: Activity 4.1: Case Study - Initial Post</li> <li><input type="checkbox"/> SAT: Activity 4.1: Case Study - Follow-up Post</li> <li><input type="checkbox"/> SUN: Activity 4.2: Exercise Prescription Analysis</li> </ul>
<p>Week 5:</p> <p>Glucose Regulation</p> <p>Antidiabetic Medications</p> <p>Medication Impact</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> WED: Activity 5.1: Case Study - Initial Post</li> <li><input type="checkbox"/> SAT: Activity 5.1: Case Study - Follow-up Post</li> <li><input type="checkbox"/> SUN: Activity 5.2: Exercise Prescription Analysis</li> </ul>
<p>Week 6:</p> <p>Neuromuscular Junction</p> <p>Muscle Contraction</p> <p>Muscular Agents</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> WED: Activity 6.1: Case Study - Initial Post</li> <li><input type="checkbox"/> SAT: Activity 6.1: Case Study - Follow-up Post</li> <li><input type="checkbox"/> SUN: Activity 6.2: Exercise Prescription Analysis</li> </ul>
<p>Week 7:</p> <p>Drug Interactions</p> <p>Adverse Effects</p> <p>Therapeutic Decisions</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> WED: Activity 7.1: Case Study - Initial Post</li> <li><input type="checkbox"/> SAT: Activity 7.1: Case Study - Follow-up Post</li> <li><input type="checkbox"/> SUN: Activity 7.2: Final Project</li> </ul>

### Tips for Success

Successful online learning requires a good deal of self-discipline and self-direction. As seekers of the truth, we should be willing to challenge and review one another's academic work in a spirit of respectful comradery and constructiveness. Your course is a place for you to stretch and grow as you benefit from the expertise, knowledge, experience and diverse

perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge, understanding and application.

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.