



# Department of Kinesiology

KIN 6067 – Disruptive Health Technologies

3 Units

## Course Information

**Meeting days: Monday**

**Instructor title and name: Dr. Ted Vickey**

Meeting times: 5:30pm Pacific

Phone: 619.849.7111

Meeting location: Online

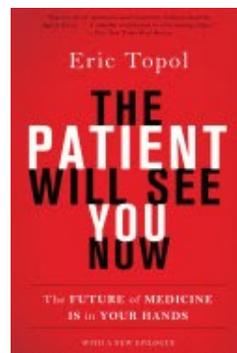
E-mail: [tvickey@pointloma.edu](mailto:tvickey@pointloma.edu)

Final Exam: None

Office location and hours: Kinesiology 11 (main campus); **By appointment**

Additional info: None

Required Text: “ The Patient Will See You Now”



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# PLNU Mission

## To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

### **COURSE DESCRIPTION**

Former Surgeon Dr. Richard Carmona once said: “We don’t have a healthcare system, we have a sick-care system”. To change this narrative, a change in the industry is needed. One such change is through innovation through technology. For this course, we will focus on the consumer-facing aspect of health technology that could be used by a wellness provider.

Disruptive Health Technology (DHT) is a broad term that encompasses the use of digital devices and platforms, including consumer-facing health, fitness and wellness apps, mobile health (mHealth) applications, and wearable device biosensors to improve the process and outcomes of wellness delivery.

In this course, we will explore how digital interventions are being employed to drive decisions and offer value to both client and wellness provider. We will begin by focusing on the need for the evaluation of these types of DHT and the impact they can have on consumers. Over 80% of the US population now owns a smartphone. The ubiquity of smartphones offers a digital portal for wellness clients to collect data about their physical activity, sleep patterns, symptoms, and health-related quality of life.

Advances in micro-computing and smartphone adoption have enabled the development of wearable biosensors for everyday use to measure a wide range of physiologic parameters. Off-the-shelf wearables enable convenient acquisition of free-range activity data among large patient populations.

However, despite the promise of using different types of disruptive health technology, many of these claims have not yet been rigorously tested at scale. There is currently a need for a greater understanding of how wellness providers use such technology and more research supporting population health monitoring with digital devices.

- Some Tips on Succeeding in this Class.
- The goal is for everyone to do well in this class!
- Enjoy the class, first and foremost.
- You will learn more from this class if you try and do the readings.
- Most of the questions in this class do not really have a best answer. There is a lot of uncertainty in this field, so it's most important to justify your answer to at least get partial credit.
- In the discussion boards, challenge each other, ask each other lots of questions, and get deep into the problem. Try not to wait until the end or you won't get as much out of the problem.
- Post questions during class. Your instructor looks forward to discussion and dialogue. If you have a question, then someone else probably has the same question.

## **INSTITUTIONAL LEARNING OUTCOMES (ILO)**

### **Learning, Informed by our Faith in Christ:**

Students will acquire knowledge of human cultures and the physical and natural world while developing skills and habits of the mind that foster lifelong learning;

### **Growing, In a Christ-Centered Faith Community:**

Students will develop a deeper and more informed understanding of others as they negotiate complex professional, environmental and social contexts.

### **Serving, In a Context of Christian Faith:**

Students will serve locally and/or globally in vocational and social settings.

## **PROGRAM LEARNING OUTCOMES (PLO)**

The Point Loma Nazarene University MS-KIN graduate will be able to:

1. Appraise current research data in Kinesiology and integrate it into professional practice to solve relevant problems and make effective decisions.
2. Work independently and with a team to persuasively communicate essential information in their discipline.
3. Demonstrate appropriate breadth of knowledge of the background and principle research in their specialization in order to conduct an independent research project.
4. Serve various populations, integrating compassionate care and the Christian faith with their professional practice.
5. Pursue an active and growing involvement in their discipline by achieving advanced certification and/or membership in a related professional organization

## **COURSE LEARNING OUTCOMES (CLO)**

After completing this course students will be able to:

1. Develop a conceptual framework for how digital health technology and the quantified self-movement can improve the value of wellness;
2. Demonstrate proficiency in best practices for developing, validating, and testing wearables and apps in wellness;
3. Recognize when best to use social media as a database for wellness;
4. Analyze the pros and cons of different wearable and app architectures and features;
5. Acknowledge the challenges of implementing digital health technology interventions within wellness industry;
6. Demonstrate proficiency in best practices for developing and evaluating mobile health (mHealth) applications

## **COURSE CREDIT HOUR INFORMATION**

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 3 unit class delivered over 8 weeks. Specific details about how the class meets the credit hour requirement can be provided upon request.

## **ASSESSMENT AND GRADING**

The total number of points accumulated on assignments exams, quizzes, determines your final letter grade in this course. This course has been divided into four segments every week. This is a rolling class with the same assignments due every week. There is NO milestone assignment. Assignments are due by 11:59 pm every Sunday.

## Assignment distribution by points:

1. DHT Group Project - 350 points
2. Discussion Posts - 240 points
3. Twitter assignment - 160 points
4. The Patient Will See You Now Discussion Posts - 160 points
5. Paper - 90 points

### Standard Grade Scale Based on Percentage of Points Earned

| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>F</b> |
|----------|----------|----------|----------|----------|
| A 93-100 | B+ 87-89 | C+ 77-79 | D+ 67-69 | F ≤ 59   |
| A- 90-92 | B 83-86  | C 73-76  | D 63-66  |          |
|          | B- 80-82 | C- 70-72 | D- 60-62 |          |

A score of "C" (730 points) must be earned to pass this course.

A 3.0 grade point average is required to remain in good academic standing in the program.

## New Cohorts starting January 2018:

Students must complete the required program hours in the major (program) from Point Loma Nazarene University with a minimum grade of "C" in each course and an overall 2.00 grade point average.

## LEARNING MODULES

### Module Schedule

#### **Module 1**                      **Overview, methods for evaluation and course set up**

**Module 2**                      Physical Activity technology evaluations and course content for discussion groups. Please see Module for links.

**Module 3**                      Health coach technology evaluations and course content for discussion groups. Please see Module for links.

**Module 4**                      Sleep technology evaluations and course content for discussion groups. Please see Module for links.

**Module 5**                      Nutrition technology evaluations and course content for discussion groups. Please see Module for links.

**Module 6**                      Mindfulness technology evaluations and course content for discussion groups. Please see Module for links.

**Module 7** Stress technology evaluations and course content for discussion groups. Please see Module for links.

**Module 8** Wellness technology evaluations and course content for discussion groups. Please see Module for links.

## ASSESSMENT AND GRADING

Course Requirements: Assessment of Course Learning Outcomes

**Discussion Board Participation (40%):** Assesses Course Learning Outcomes #1-5

We have supplemented the course text and lecture materials with current evidence-based journal articles, relevant videos, books and other types of journals. These readings will be provided via electronic access to journal articles. It is expected that course material will be read before posting to the discussion board so that informed and lively discussion may be the primary focus of class meetings. After readings, you will respond to questions on the Discussion Board on Canvas. Your initial post is due Friday, your reply post is due Sunday.

**Twitter posts (16%):** Assesses Course Learning Outcomes #2-6

At the end of each week, you will send 10 tweets that contain #KIN667. These tweets should highlight the major themes, facts and/or key points we discussed or that you learned during the week.

**Disruptive Health Technology review (35%):** Assesses Course Learning Outcomes #1-6

The final cumulative project for this course will be a group project in which your group will:

1. Create a criteria matrix to evaluate DHT;
2. Evaluate two types of DHT categories using the matrix by each member of your group
3. Design a template that will be used to create a white paper of your peer-reviewed DHT;
4. Create a final white paper that includes your group's peer-reviewed DHT.

There are four parts to this assignment:

1. Create criteria to use in evaluation - **due Week 3 - 50 points**;
2. Each team member will evaluate a different DHT (app or wearable) for **Weeks 4 and 5 - both due Week 5 - 75 points per review (for a total of 150 points)**. Your fellow group members will peer evaluate your submission and return to you for any updates based on their suggestions;
3. Design of the White Paper - **due Week 6 - 50 points**;
4. Final submission (submitted as PDF) - **due Week 8 - 100 points**.

**Course evaluations (5%)**

**Miscellaneous (4%)**

**Participation:** There is an expectation that students come prepared and participate fully in discussions and meetings.

### Course Schedule and Assignments (subject to change)

| Date | Topic | Meeting | Assignments |
|------|-------|---------|-------------|
|------|-------|---------|-------------|

|               |                   |  |   |
|---------------|-------------------|--|---|
| <b>Week 1</b> | DHT evaluations   | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |
| <b>Week 2</b> | Physical Activity | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |
| <b>Week 3</b> | Health Coaching   | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |
| <b>Week 4</b> | Sleep             | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |
| <b>Week 5</b> | Nutrition         | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |
| <b>Week 6</b> | Mindfulness       | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |
| <b>Week 7</b> | Stress            | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |
| <b>Week 8</b> | Wellness          | None, all work to be completed during week | 10 Tweets<br>Discussion Board post - weekly content<br>Discussion Board post – The Patient Will See You Now |

Note: If there is a change in the course schedule, a message will be posted on Canvas. For example, guest speakers are possible depending on their availability. Any video instruction by the Professor or presentation will take place on Zoom and will be recorded.

## **INCOMPLETES AND LATE ASSIGNMENTS**

All assignments are to be submitted to Canvas by the assigned due date. Late assignments will be subject to a deduction of 10% per day. Even if the deadline is missed, all assignments are expected to be submitted.

NOTE: It is your responsibility to maintain your class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), you have the responsibility to first contact the professors. Then if no accommodations can be made, you are responsible for following through (provided the drop date meets the stated calendar deadline established by the university).

## **COPYRIGHT POLICY**

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## **ACADEMIC HONESTY**

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See the **Academic Honesty Policy** in the Graduate and Professional Studies Catalog for definitions of kinds of academic dishonesty and for further policy information.

## **PLNU ACADEMIC ACCOMMODATIONS POLICY**

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center, located in the Bond Academic Center (**DRC@pointloma.edu** or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

## **PLNU ATTENDANCE AND PARTICIPATION POLICY**

Regular and punctual attendance at all **synchronous** class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions (virtual or face-to-face), the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. In some courses, a portion of the credit hour content will be delivered **asynchronously** and attendance will be determined by submitting the assignments by the posted due dates. See **Academic Policies** in the Graduate and Professional Studies Catalog. If absences exceed these limits but are due to university excused health issues, an exception will be granted.

### **Asynchronous Attendance/Participation Definition**

A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

Students taking online courses are expected to attend each week of the course. Attendance is defined as participating in an academic activity within the online classroom which includes posting in a graded activity in the course. (Note: Logging into the course does not qualify as participation and will not be counted as meeting the attendance requirement.)

Students who do not attend at least once in any 3 consecutive days will be issued an attendance warning. Students who do not attend at least once in any 7 consecutive days will be dropped from the course retroactive to the last date of recorded attendance.

Students who anticipate being absent for an entire week of a course should contact the instructor in advance for approval and make arrangements to complete the required coursework and/or alternative assignments assigned at the discretion of the instructor.

### **ACADEMIC STANDING**

Graduate students at Point Loma must obtain a 3.0 GPA to remain in good standing in the MS Kinesiology program. Additionally, all graduate students need to earn a C or higher in all graduate courses according to the catalog grading policy found here: **GPS Academic Standing**

### **GRADING SYSTEM**

Traditional letter grades (A, B, C, D, F) including plus and minus grades are used to indicate the level of scholarship earned for each course. Except for the correction of an error, all traditional letter grades are final at the conclusion of the academic term. Once the degree has been posted on the student's official transcript, no change of grade action is allowed for courses leading to the degree. The grade of C is the lowest grade acceptable for graduate credit.

### **INFORMATION LITERACY**

The curriculum of the MS-KIN is designed so that you develop skills in scientific writing, performing statistical analysis of data, reading and critically appraising primary literature, and incorporating current best evidence into your professional practice. Not all information is equally sound or applicable to your practice. Various assignments within this course are designed to accomplish the goal of informational literacy—to evaluate the validity and importance of information obtained from any source and use the information appropriately to solve relevant problems.

### **SPIRITUAL CARE**

PLNU strives to be a place where you grow as a whole person. To this end we provide resources for our Graduate and Adult Degree Completion students to encounter God and grow in their Christian faith. At the Mission Valley (MV) campus we have an onsite chaplain, Rev. Gordon Wong, who is available during class break times across the week. If you have questions for, desire to meet or share a prayer request with Rev. Wong you can contact him directly at **mvchaplain@pointloma.edu** or **gordonwong@pointloma.edu**.

Rev. Wong's cell number is 808-429-1129 if you need a more immediate response.

### **STATE AUTHORIZATION**

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map using the below link to view which states allow online (distance education) outside of California. <https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures>

## **USE OF TECHNOLOGY**

In order to be successful in the online environment, you'll need to meet the minimum technology and system requirements; please refer to the [\*\*\*Technology and System Requirements\*\*\*](#) information. Additionally, students are required to have headphone speakers compatible with their computer available to use. If a student is in need of technological resources please contact [\*\*student-tech-request@pointloma.edu\*\*](mailto:student-tech-request@pointloma.edu) .

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.