

## SCHOOL OF HEALTH AND SCIENCES

### SYLLABUS

**TITLE:** Measurement and Evaluation of Physical Activity  
**CODE:** CFI 414  
**CREDITS:** 3 credits | 45 contact hours | 1 term

### DESCRIPTION

Health professionals working in exercise-related environments require extensive technical knowledge to safeguard the safety and effectiveness of work in the professional field. This broad technical knowledge covers pre-participation screening, cardiorespiratory assessment, musculoskeletal assessment, flexibility, and interpretation of results for a scientifically based exercise prescription. This knowledge stimulates critical thinking through the use of tests and interpretation of statistics suitable for the classification of individuals according to their respective population. Thus, creating an appropriate design using a measurement and evaluation with valid and reliable data for the education of the different affected populations. This is a theoretical and practical course.

### JUSTIFICATION

The measurement and evaluation aspects of exercise science are used for the evaluation of clinical patients, athletes, and the general population. The concepts of measurement and evaluation provide the necessary information for the specific intervention of the individuals to be evaluated. Measurement and evaluation will help the health professional to identify the scenario, instrumentation and time needed to execute the different tests for the collection of information. The information could show strengths and weaknesses of logical progression. The correct application of this knowledge will enable highly qualified health professionals to use procedures to assess human performance, health, and well-being.

## **COMPETENCES**

The course develops the following competences in students:

- **Entrepreneurship and innovation**
- **Research and exploration**
- **Communication**

## **OBJECTIVES**

After completion of the course, students will be able to:

1. Know the basic terminology associated with the assessment.
2. Learn the metric conversions and units recommended by the international system of measurements.
3. Describe the risk stratification guidelines of the American College of Sports Medicine.
4. Provide rationality of data collection during evaluation.
5. Design tests for physical fitness and/or biomotor abilities.
6. Demonstrate scientific and ethical conduct in the handling of data and information.
7. Identify valid and reliable sources of information in various formats related to the measurement and evaluation of physical activities.

## **CONTENTS**

- I. Evaluation Measures and Statistics:
  - A. Measurement processes
  - B. Variables
  - C. Research designs and statistical analysis
  - D. Data organization
  - E. Measures of central tendency
  - F. Inferential statistics
  - G. Non-parametric statistics
  - H. Standards of evaluation
- II. Risks and Benefits of Physical Activity
  - A. Fitness and physical activity terminology
  - B. Risks associated with physical activity
  - C. Pre-participation screening

- D. Informed consent
- E. Selection criteria
- F. Nature of the tests and their administration
- G. Application to special populations
- III. Measurement and Evaluation of Physical Components:
  - A. Basic principles of program design
  - B. Basic physical skills
  - C. Physical efficiency in the young, young adults, and the elderly
  - D. Cardiorespiratory evaluation
  - E. Musculoskeletal evaluation
  - F. Body composition assessment
  - G. Weight management
  - H. Flexibility assessment
  - I. Health-related skills
  - J. Psychological dimensions
  - K. Ethical aspects in information management

## **METHODOLOGY**

The following strategies from the active learning methodology are recommended:

- Project based learning
- Collaborative learning
- Lectures
- Group discussions
- Simulations
- Laboratories

## **EVALUATION**

Partial assignments	30%
Oral presentations	20%
Participation	25%
Final project or exam	25%
<b>Total</b>	<b>100%</b>

## **LEARNING ASSESSMENT**

The institutional assessment rubric is applied to the course's core activity.

## **BIBLIOGRAPHY**

### **TEXTBOOK**

Gibson, A., Wagner, D., & Heyward, V. (2019). *Advance Fitness Assessment and Exercise Prescription* (8<sup>th</sup> ed.). Human Kinetics.

### **REFERENCES**

Haff, G., Triplett, N. (2016). *Essentials of Strength Training and Conditioning*. Human Kinetics.

Heyward, V. H. (2010). *Advance Fitness Assessment and Exercise Prescription*. Human Kinetics.

Hoffman, J. (2006). *Norms for fitness and performance*. Human Kinetics.

Riebe, D. (2018). *ACSM's Guidelines for Exercise Testing and Prescription* (10<sup>th</sup> ed.). Wolters Kluwer.

Tanner, R. K., Gore, C. J. (2013). *Physiological Test for Elite Athletes*. Australian Institute of Sports/ Human Kinetics.

Thomas, J., Nelson, J., & Silverman, S. (2015). *Research Methods in Physical Activity* (7<sup>th</sup> ed.). Human Kinetics.

Weir, J., Vincent, W. (2020). *Statistics in Kinesiology* (5<sup>th</sup> ed.). Human Kinetics.

For more information resources related to the course's topics, access the library's webpage <http://biblioteca.sagrado.edu/>

## **REASONABLE ACCOMMODATION**

For detailed information on the process and required documentation you should visit the corresponding office. To ensure equal conditions, in compliance with the ADA Act (1990) and the Rehabilitation Act (1973), as amended, any student in need of reasonable accommodation or special assistance must complete the process established by the Vice Presidency for Academic Affairs.

## **ACADEMIC INTEGRITY**

This policy applies to all students enrolled at Universidad del Sagrado Corazón to take courses with or without academic credit. A lack of academic integrity is any act or omission that does not demonstrate the honesty, transparency, and responsibility that should characterize all academic activity. Any student who fails to comply with the Honesty, Fraud, and Plagiarism Policy is exposed to the following sanctions: receive a grade of zero in the evaluation and / or repetition of the assignment in the seminar, a grade of F (\*) in the seminar, suspension, or expulsion as established in the Academic Integrity Policy effective in November 2022.

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