

## SCHOOL OF HEALTH AND SCIENCES

### SYLLABUS

<b>TITLE:</b>	Cardiorespiratory Conditioning
<b>CODE:</b>	CFI 301
<b>PREREQUISITE:</b>	CFI 204
<b>CREDITS:</b>	3 credits   45 contact hours   1 term

### DESCRIPTION

Study of cardiorespiratory conditioning through various modalities of physical exercises. The theories, rules, and techniques to organize and offer physical activities aimed at groups and individuals through the modalities of aerobic rhythmic exercises (high and low impact, Zumba, and step aerobics), walking/running, and spinning are studied. The course is developed through lectures and practical exercises of each modality.

### JUSTIFICATION

The Exercise Science and Physical Education professional has the responsibility of designing, developing, and delivering programs that promote health for individuals and groups with different needs. The exercise specialist also prepares to work as a personal trainer. There is a need to develop exercise specialists who can design and deliver varied and innovative programming that facilitates the creation of favorable environments that promote healthy lifestyles for the general population.

### COMPETENCES

The course develops the following competences in students:

- **Entrepreneurship and innovation**
- **Communication**
- **Ethical sense and social justice**

## **OBJECTIVES**

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

1. Define the concepts of cardiorespiratory conditioning, group exercises, individual vs. mixed class, health/fitness components, and training principles.
2. Conduct reviews of the available literature on the various modalities of exercises, marketing, design and implementation, evaluation of client progress, programming, and motivation on the Internet.
3. Select the basic equipment needed to teach the exercise modalities in the course.
4. Develop logical, critical, and creative thinking skills.
5. Act responsibly during their active participation in group works.
6. Demonstrate outstanding teamwork skills.
7. Apply the skills acquired in oral and written communication throughout the curriculum of their study program.
8. Recognize, differentiate, and practice values that form the moral conscience of human beings, both in their personal, professional, and community dimensions.
9. Behave as an agent of social change, particularly in a community context.
10. Act ethically in activities that promote the well-being of the community, its environment, and its commitment to justice, equality, and peace.

## **CONTENTS**

- I. Clarification of Concepts and Definitions
  - A. Group exercises, health/fitness-related components
  - B. Participant/client-centered or instructor-centered instructor concept, group cohesion
  - C. Evolution of the concept of "fitness", the instructor as a "role model"
  - D. Strategies for changing behaviors to physical activity
  - E. Certifications
- II. General Instructions for Group Exercises
  - A. Group organization/data collection
  - B. Communication skills
  - C. Team selection
  - D. Creating positive exercise environments
  - E. Participant/client/new orientation
  - F. Music for exercise

- G. Signals
- III. General Security Concepts
  - A. Concept of contraindicated exercises
  - B. Physical environment
  - C. Adequate equipment
  - D. Consent form
  - E. Disease history, Par-Q
- IV. Cardiorespiratory Conditioning
  - A. Principles of training
  - B. Benefits of aerobic exercise
  - C. Training methods and systems
  - D. Muscle balance
  - E. Intensity monitoring: heart rate, perceived exertion, talk test
  - F. Posture
  - G. Heating and cooling concepts
- V. Modality: Aerobic Rhythmic Exercises
  - A. Origin
  - B. Concept of balance and the biomechanical system
  - C. Continuous progressive functional training
  - D. Communication techniques
  - E. Music selection and rhythm control (cadence)
  - F. Selection of exercises and techniques
  - G. Movements and signals
  - H. Analysis, demonstration, and practice of exercise on different parts or muscles of the body
  - I. Incorporation of other equipment in the development of cardiorespiratory endurance
  - J. Variations: Zumba, steps, aerobics
  - K. Precautions and safety
- VI. Modality: Walking/Jogging, Running
  - A. Clarification of concepts: walking, jogging, and running
  - B. Postures
  - C. Warming-up and cooling-down techniques

- D. Muscle balance: flexibility and strength
  - E. Walking, jogging, and running techniques (pace)
  - F. Precautions (choosing shoes) and safety
  - G. Short-, medium-, and long-distance programs
  - H. Rest and nutrition
- VII. Modality: Bicycle/Spinning
- A. Origin
  - B. Precautions and safety
  - C. Selecting basic equipment and its maintenance
  - D. Understanding the bicycle and the sport of spinning
  - E. Types of training
  - F. Endurance training, strength training, and threshold workouts
  - G. Hill training, for time and speed

## **METHODOLOGY**

The following strategies from the active learning methodology are recommended:

- Group discussions
- Critical analysis of readings
- Oral and written reports
- Demonstrations and practice of each modality
- Individual and team works
- Content production

## **EVALUATION**

Partial assignments	20%
Participation	30%
Immersion experience	20%
Final project or exam	30%
<b>Total</b>	<b>100%</b>

## **LEARNING ASSESSMENT**

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

## BIBLIOGRAPHY

### TEXTBOOK

Mazzeo, K.S. (2008). *Fitness Through Aerobics, Step Training, Walking*. Brooks/Cole Pub. Co.

### REFERENCES

Chalmers, G. R. (2005). Exercise information resources on the world wide web. *Medical Reference Services Quarterly*, 24(4), 79-89.

Clift, Z. (2009). Are you ready for Zumba? *American Fitness*, 27(1), 37-40.

*Ejercicio y forma física*. (2002). Manual Merck. Oceano Universitatis.

Freytag, C. (2009). Walk off weight faster. *Prevention*, 61(2), 82-83.

Mandic, S., Tymchak, W., Kim, D., Daub, B., Quinney, H. A., Taylor, D., Al-Kurtass, S., Haykowsky, M. J. (2009). Effects of aerobic or aerobic and resistance training on cardiorespiratory and skeletal muscle function in heart failure: A randomized controlled pilot trial. *Clinical Rehabilitation*, 23(3), 207-217.

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Massenburg, T. (2009, February 2). Yoga for musclemen. *Advocate*.

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Oncu, J., Durmaz, B., & Karapolat, H. (2009). Short-term effects of aerobic exercise on functional capacity, fatigue, and quality of life in patients with post-polio syndrome. *Clinical Rehabilitation*, 23(2), 155- 163.

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Peña Arrebola, A. (2003). Efectos del ejercicio sobre la masa ósea y la osteoporosis. *Rehabilitación*, 37(6).

Purath, J., Buchholz, S. W., & Kark, D. L. (2009). Physical fitness assessment of older adults in the primary care setting. *Journal of the American Academy of Nurse Practitioners*, 21(2), 101-108.

## ELECTRONIC RESOURCES

[www.ncppa.org/ncppa](http://www.ncppa.org/ncppa) - National Coalition for Promoting Physical Activity

[www.acsm.org/sportmed](http://www.acsm.org/sportmed) - American College of Sport Medicine

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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