# 1. BASIC INFORMATION

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|---|---|
| **Course** | New Technologies Applied to Health |
| **Degree program** | Degree in Physical Activity and Sports Sciences |
| **School** | Physical Activity and Sports Sciences and Physiotherapy |
| **Year** | 4th Year |
| **ECTS** | 6 ECTS |
| **Credit type** | Elective |
| **Language(s)** | Spanish. English. |
| **Delivery mode** | In-person |
| **Semester** | S7 and S8 |
| **Academic year** | 2024/2025 |
| **Coordinating professor** | Álvaro Bustamante Sánchez |

# 2. PRESENTATION

This subject aims to acquire the necessary competencies for the professional development and practice as personal trainers for various groups to improve health. The objective is to familiarize oneself with the latest technologies available in the field of health and to develop the ability to use, identify, and discern the most useful ones for a personal trainer's professional activities.

# 3. LEARNING OUTCOMES

**Knowledge**

KN04. Identifies strategies and initiatives to promote healthy habits through physical activity and sport and/or auxiliary actions that help to maintain and improve physical condition.

- Identifies the key concepts for health analysis.

**Skills**

HAB2. Plans physical exercise activities, progressions and strategies to promote health and sports performance based on individual and environmental factors.

- Analyses the key concepts of specific software and hardware.
- Employs professional conduct and protocols using the relevant equipment for activities that require different apparatus and equipment.
- Applies methodology for studying different populations.
- Carries out in-depth studies and syntheses based on research using fundamental bibliographical sources related to health assessments.
- Evaluates tests for the assessment and management of physical fitness and health.

**Competences**

COMP8. Develop and draw on the expertise needed to analyse, design and evaluate tests that seek to assess and control physical fitness, and physical/sporting performance.

COMP10. Draw on the expertise needed to plan, implement, control and evaluate fitness and sports training processes.
COMP26. Adopt a rigorous and scientific approach to develop and draw on the justification needed to produce, support, defend and justify, in a consistent and professional manner, all acts, decisions, processes, procedures, initiatives, activities, tasks, conclusions, reports and professional performance.
COMP38. Digital competence. Use information and communication technologies to search for and analyze data, research, communicate and learn.
COMP40. Teamwork. Cooperate with others in shared academic or professional objectives, participating actively, empathically and exercising active listening and respect for all members.
COMP41. Critical analysis. Integrate analysis with critical thinking in a process of evaluating different ideas or professional possibilities and their potential for error, based on evidence and objective data that lead to effective and valid decision-making.

## 4. CONTENT

Topic 1. Contextualization, wearables and apps
Topic 2. Planning software
Topic 3. Assessment of cardiovascular fitness
Topic 4. Assessment of strength and body composition
Topic 5. Assessment of flexibility and balance
Topic 6. Latest developments in online personal training

## 5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:

- Lectures
- Workshop/Laboratory-based learning
- Reports and written assignments

## 6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

**Campus-based mode:**

| Learning activity | Number of hours |
|---|---|
| Lectures | 12 |
| Practical application classes | 18 |
| Independent work | 56 |
| Debates and discussions | 8 |
| Tutoring | 12 |
| In-person assessments | 2 |
| Report and writing preparation | 22 |

| | |
|---|---|
| Workshop and/or laboratory activities | 20 |
| **TOTAL** | **150** |

# 7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

**Campus-based mode:**

| Assessment system | Weight |
|---|---|
| In-person assessments | 40-50% |
| Workshop/Laboratory-based learning | 45-50% |
| Reports and written assignments | 5-10% |

When you access the course on the *Campus Virtual*, you'll find a description of the assessment activities you have to complete, as well as the delivery deadline and assessment procedure for each one.

## 7.1. First exam period

To pass the course in the first exam period, you must obtain a final course grade of at least 5 out of 10 (weighted average).

In any case, you will need to obtain a grade of at 4.0 in the final exam in order for it to count towards the final grade along with all the grades corresponding to the other activities.

## 7.2. Second exam period

To pass the course in the second exam period, you must obtain a final grade of at least 5 out of 10 (weighted average).

In any case, you will need to obtain a grade of at 4.0 in the final exam in order for it to count towards the final grade along with all the grades corresponding to the other activities.

The student must deliver the activities not successfully completed in the first exam period after having received the corresponding corrections from the professor, or those that were not delivered in the first place.

# 8. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

| Assessable activities | Deadline |
|---|---|
| Prepare a report for the assessment of cardiovascular capacity | September |
| Prepare an evaluation report on training and body composition using technology | October |
| Prepare an evaluation report on flexibility and balance using technology | November |
| Prepare an evaluation report on training using specific planning software | December |

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any change as and when appropriate.

## 9. BIBLIOGRAPHY

The main reference work for this subject is:


- Coburn, J. W., & Malek, M. H. (2017). Manual NSCA: fundamentos del entrenamiento personal. Paidotribo.


The recommended Bibliography is:


- American College of Sport Medicine. (2021). ACMS´s Guidelines for Exercise Testing and Prescription. The point: Baltimore.
- American College of Sport Medicine. (2014). ACMS´ Resources for the Health Fitness Specialist. Wolters Kluwer: USA
- Airaska, D. (2002). Actividad Física y Salud. Web en línea: www.sobreentrenamiento.es
- Bandura, A. A Social Fundations of Though and Action: A Social Cognitive Theory. Prentice-Hall: USA
- Becker, MH. Maiman, LA. Kirscht, JP. Don, PH. Drachman, RH. (1977). The Health Belief Model and Prediction of Dietary Compliance: A Field Experiment. J Health Soc Behav.
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- Golding, L. (2000). YMCA Fitness Testing and Assessment Manual. Human Kinetics: USA.
- Heyward, V. (2014). Evaluación de la Aptitud Física y Prescripción del Ejercicio. Panamericana: Madrid.
- López, J. López, L. (2008). Fisiología Clínica del Ejercicio. Panamericana: Madrid.
- Naclerio, F. (2010). Entrenamiento Deportivo. Fundamentos y aplicaciones en diferentes deportes. Panamericana: Madrid.

- Rikli, R. E. Jessie Jones, R.C. (2001).Senior Fitness Test Manual. Human Kinetics.
- American College of Sport Medicine. http://acsm.org/
- American Heart Association. http://www.heart.org/HEARTORG/
- Canadian Society for Exercise Physiology. http://www.csep.ca/english/view.asp?x=1
- Eurobarómetro. http://ec.europa.eu/spain/sobre-la-ue/euro-barometro/index_es.htm
- Framingham Heart Study. http://www.framinghamheartstudy.org/
- Imserso. http://www.imserso.es/imserso_01/index.htm
- Instituto Nacional de Estadística. http://www.ine.es/
- McKinley Health Center. http://www.mckinley.illinois.edu/
- National Strengh and conditioning association. http://www.nscaspain.com/web/nsca.aspx
- Nurses´s Health Studie. http://www.channing.harvard.edu/nhs/
- Organización Mundial de la Salud. http://www.who.int/es/


## 10. EDUCATIONAL GUIDANCE AND DIVERSITY UNIT

From the Educational Guidance and Diversity Unit we offer support to our students throughout their university life to help them reach their academic achievements. Other main actions are the students inclusions with specific educational needs, universal accessibility on the different campuses of the university and equal opportunities.

From this unit we offer to our students:

1. Accompaniment and follow-up by means of counselling and personalized plans for students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made in terms of methodology and assessment for those students with specific educational needs, pursuing an equal opportunities for all students.
3. We offer students different extracurricular resources to develop different competences that will encourage their personal and professional development.
4. Vocational guidance through the provision of tools and counselling to students with vocational doubts or who believe they have made a mistake in their choice of degree.

Students in need of educational support can write to us at:

orientacioneducativa@universidadeuropea.es

## 11. ONLINE SURVEYS

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation.