



1. General information

Course: ADVANCES IN SPORT BIOMECHANICS AND EXERCISE PHYSIO**Type:** CORE COURSE**Degree:** 2323 - MASTERS DEGREE PROGRAMME IN SPORT SCIENCE**Center:** 8 - FACULTY OF SPORT SCIENCES**Year:** 1**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 310494**ECTS credits:** 6**Academic year:** 2023-24**Group(s):** 40**Duration:** First semester**Second language:** English**English Friendly:** Y**Bilingual:** N**Lecturer:** LUIS MARIA ALEGRE DURAN - Group(s): 40

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2. Pre-Requisites

Not established

3. Justification in the curriculum, relation to other subjects and to the profession

Not established

4. Degree competences achieved in this course

Course competences

| Code | Description |
|------|--|
| E01 | Manage the different research techniques in the Sciences of Physical Activity and Sport, identifying the differential facts of the study carried out. |
| E04 | Design research projects in the Sciences of Physical Activity and Sport adjusting to the conditions of the field of study. |
| E09 | Use scientific methodology to study physiological variables linked to sports performance |
| E11 | Apply advanced biomechanical analysis methodologies in experimental designs. |
| G04 | Carry out a critical analysis, on the development and presentation of new and complex ideas in the field of study of physical activity for health and sport performance, by means of an informed assessment. |
| M016 | To use scientific methodology for the study of physiological variables linked to sports performance. (G1, G2, G3, G4, E1, E2, E3, E4, E9, E11). |
| M018 | To apply research designs related to fatigue and recovery of the athlete. (G1, G2, G3, G4, E1, E2, E3, E9, E11, E12) |
| M019 | To apply advanced methodologies of biomechanical analysis in physical activity and sport. (G1, G2, G3, E1, E2, E3, E4, E10). |
| M020 | To apply experimental designs used in biomechanical research. (G1, G2, G3, E1, E2, E3, E4, E10). |

5. Objectives or Learning Outcomes

Course learning outcomes

Description

To learn about research lines related to nutrition, fatigue, health and recovery of the athlete.

To prepare a critique of a scientific article in biomechanics.

To utilize biomechanical methodologies to solve a specific research question in a sport modality.

To apply the scientific methodology for the study of the most influential physiological variables in sports performance.

To interpret the physiological and nutritional assessment based on the differential aspects related to age and gender.

Additional outcomes

6. Units / Contents

Unit 1:**Unit 2:****Unit 3:****Unit 4:**

Unit 5:
Unit 6:
Unit 7:
Unit 7.1
Unit 7.2
Unit 7.3
Unit 7.4
Unit 7.5
Unit 7.6
Unit 8:
Unit 9:
Unit 10:
Unit 11:

| 7. Activities, Units/Modules and Methodology | | | | | | | |
|---|---|---|---|------------|----|-----|-------------|
| Training Activity | Methodology | Related Competences (only degrees before RD 822/2021) | ECTS | Hours | As | Com | Description |
| Class Attendance (theory) [ON-SITE] | Lectures | E01 M020 | 0.55 | 13.75 | Y | N | |
| Class Attendance (practical) [ON-SITE] | Practical or hands-on activities | E11 M019 M020 | 0.2 | 5 | Y | N | |
| Analysis of articles and reviews [OFF-SITE] | Reading and Analysis of Reviews and Articles | E01 M020 | 1.25 | 31.25 | Y | N | |
| Other off-site activity [OFF-SITE] | Project/Problem Based Learning (PBL) | E01 E11 M019 M020 | 1 | 25 | Y | N | |
| Class Attendance (theory) [ON-SITE] | Lectures | M018 | 0.25 | 6.25 | Y | Y | |
| Class Attendance (practical) [ON-SITE] | Practical or hands-on activities | M018 | 0.11 | 2.75 | Y | Y | |
| Analysis of articles and reviews [OFF-SITE] | Reading and Analysis of Reviews and Articles | M018 | 0.6 | 15 | Y | N | |
| Writing of reports or projects [OFF-SITE] | Problem solving and exercises | M018 | 0.54 | 13.5 | Y | Y | |
| Workshops or seminars [ON-SITE] | project-based learning | E04 | 0.36 | 9 | Y | N | |
| Off-site theoretical learning [OFF-SITE] | Individual presentation of projects and reports | G04 | 1.14 | 28.5 | Y | N | |
| Total: | | | 6 | 150 | | | |
| Total credits of in-class work: 1.47 | | | Total class time hours: 36.75 | | | | |
| Total credits of out of class work: 4.53 | | | Total hours of out of class work: 113.25 | | | | |

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

| 8. Evaluation criteria and Grading System | | | |
|---|-----------------------|----------------------------|-------------|
| Evaluation System | Continuous assessment | Non-continuous evaluation* | Description |
| Fieldwork assessment | 25.00% | 25.00% | |
| Assessment of active participation | 5.00% | 0.00% | |
| Final test | 0.00% | 25.00% | |
| Final test | 20.00% | 25.00% | |
| Progress Tests | 25.00% | 0.00% | |
| Assessment of problem solving and/or case studies | 25.00% | 0.00% | |
| Final test | 0.00% | 25.00% | |
| Total: | 100.00% | 100.00% | |

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

| 9. Assignments, course calendar and important dates | |
|---|--------------|
| Not related to the syllabus/contents | |
| Hours | hours |
| Unit 1 (de 11): | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 3 |
| Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities] | 6 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 14.5 |
| Other off-site activity [AUTÓNOMA][Project/Problem Based Learning (PBL)] | 14 |
| Unit 2 (de 11): | |

| Activities | Hours |
|---|-------|
| Class Attendance (theory) [PRESENCIAL][Lectures] | 2 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 6 |
| Other off-site activity [AUTÓNOMA][Project/Problem Based Learning (PBL)] | 6 |
| Unit 3 (de 11): | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 4 |
| Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities] | 2 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 5 |
| Other off-site activity [AUTÓNOMA][Project/Problem Based Learning (PBL)] | 5 |
| Unit 4 (de 11): | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 4 |
| Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities] | 2 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 8 |
| Other off-site activity [AUTÓNOMA][Project/Problem Based Learning (PBL)] | 7.75 |
| Unit 5 (de 11): | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 1 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 3.25 |
| Other off-site activity [AUTÓNOMA][Project/Problem Based Learning (PBL)] | 3.25 |
| Unit 6 (de 11): | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 1.25 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 2.15 |
| Unit 7 (de 11): | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 4 |
| Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities] | 2.75 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 12.85 |
| Writing of reports or projects [AUTÓNOMA][Problem solving and exercises] | 13.5 |
| Workshops or seminars [PRESENCIAL][project-based learning] | 28 |
| Off-site theoretical learning [AUTÓNOMA][Individual presentation of projects and reports] | 9 |
| Unit 8 (de 11): | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 1 |
| Unit 9 (de 11): | |
| Activities | Hours |
| Workshops or seminars [PRESENCIAL][project-based learning] | 3 |
| Off-site theoretical learning [AUTÓNOMA][Individual presentation of projects and reports] | 9 |
| Unit 10 (de 11): | |
| Activities | Hours |
| Workshops or seminars [PRESENCIAL][project-based learning] | 3 |
| Off-site theoretical learning [AUTÓNOMA][Individual presentation of projects and reports] | 9 |
| Unit 11 (de 11): | |
| Activities | Hours |
| Workshops or seminars [PRESENCIAL][project-based learning] | 3 |
| Off-site theoretical learning [AUTÓNOMA][Individual presentation of projects and reports] | 10.5 |
| Global activity | |
| Activities | hours |
| Off-site theoretical learning [AUTÓNOMA][Individual presentation of projects and reports] | 37.5 |
| Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities] | 10 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 36.75 |
| Other off-site activity [AUTÓNOMA][Project/Problem Based Learning (PBL)] | 36 |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 6.25 |
| Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities] | 2.75 |
| Analysis of articles and reviews [AUTÓNOMA][Reading and Analysis of Reviews and Articles] | 15 |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 14 |
| Writing of reports or projects [AUTÓNOMA][Problem solving and exercises] | 13.5 |
| Workshops or seminars [PRESENCIAL][project-based learning] | 37 |
| Total horas: 208.75 | |

| 10. Bibliography and Sources | | | | | | |
|--|---|------------------|------|------|------|---------------|
| Author(s) | Title/Link | Publishing house | Citv | ISBN | Year | Description |
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