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|------------------|-------------------------------------|----------------|---------------------------------------|
| Course Unit      | Growth and Motor Development        | Field of study | Sport Sciences                        |
| Bachelor in      | Sports - Minor in Sports Management | School         | School of Education                   |
| Academic Year    | 2023/2024                           | Year of study  | 2                                     |
| Type             | Semestral                           | Semester       | 2                                     |
| Workload (hours) | 108                                 | Contact hours  | T 30 TP - PL 15 TC - S - E - OT - O - |
| Level            | 1-2                                 | ECTS credits   | 4.0                                   |
| Code             | 9563-624-2201-00-23                 |                |                                       |

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Vítor Pires Lopes

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. To understand the motor development process
2. To understand the physical fitness and capabilities growing process
3. To understand the difference between the modal and differential growing and development

### Prerequisites

Before the course unit the learner is expected to be able to:  
Knowledge about anatomy, physiology and statistic

### Course contents

Somatic growth; Biologic maturation, Growth and maturation of nervous system; Skills development Motor capabilities Environment and genetic regulation of growth, maturation and performance; Motor competence; Trainability and readiness for sport Variation of motor and sport performance during growth Physical activity, play and development

### Course contents (extended version)

1. Methods and current trends in growth and motor development
2. The dynamic of development process
3. Somatic growth
  - Growth curves
  - Skeletal growth
  - Muscular and adipose tissues growth
  - Nervous system growth
  - Growth as genetic regulated process
4. Biologic maturation
  - Concepts and assessment
  - Bone maturation assessment
  - Sexual maturation
  - Somatic maturation
  - Inter-individual variability in maturation
  - Adult height prediction
5. Physical training, Growth and maturation
6. Growth and maturation of nervous system
  - Myelination
  - Synaptogenesis
7. Influencing factors of variation in growth, maturation and performance
  - Introduction to the variability of continuous characteristics
  - Environmental factors
  - Secular tendency
8. Motor skills development Concepts in motor skills development
  - Theories in motor skills development
  - Descriptive model of motor skills development
  - Assessment of fundamental motor skills
  - Instruction effects in motor skills development
9. Motor capabilities
  - Concepts
  - Physical aptitudes and motor development
  - Aptitudes differentiation
  - Physical fitness, a multidimensional construct
10. Motor competency
11. Trainability and readiness for sport
12. Variation of motor and performance during growth
  - Somatic shape and performance
  - Somatotype and body composition
  - Sexual dimorphism and performance
13. Children Play
  - Characteristics of children play
  - Playgrounds characteristics

### Recommended reading

1. Gabbard, C. (2016). Lifelong Motor Development: Wolters Kluwer Health.
2. Lopes, V. P. ; Maia, J. A. R. ; Mota, J. (2000). Aptidões e habilidades motoras. Uma visão desenvolvimentalista. Livros Horizonte. Lisboa
3. Malina, R. M. ; Bouchard, C. (2004). Growth, maturation and physical activity. 2ª ed. Human Kinetics. Champaign
4. Lopes, V. P. (1998). Desenvolvimento motor. Indicadores bioculturais e somáticos do rendimento motor de crianças de 5/6 anos. Bragança: Instituto Politécnico de Bragança.

### Teaching and learning methods

Presentation and discussion of the topics Practical work. Inverted classroom teaching method may be adopted in some subjects

**Assessment methods**

1. Continue evaluation - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 50% (Individual test)
  - Intermediate Written Test - 50% (Individual test)
2. Exam evaluation - (Regular, Student Worker) (Supplementary, Special)

**Language of instruction**

Portuguese

**Electronic validation**

|                   |                                 |  |                              |
|-------------------|---------------------------------|--|------------------------------|
| Vitor Pires Lopes | Pedro Miguel Monteiro Rodrigues | Pedro Miguel Queirós Pimenta Magalhaes | Carlos Manuel Costa Teixeira |
| 30-01-2024        | 25-02-2024                      | 26-02-2024                             | 27-02-2024                   |