

Course Unit: 400332 - Occupational Biomechanics I

Year 1 Semester 1 ISCED Code: 0915 ECTS: 6

Type of Course Unit: Compulsory Delivery Mode: Face-to-face Language of Instruction: Portuguese

COURSE COORDINATOR: Patrícia Alexandra Rodrigues Santos

HOURS OF WORK

TOTAL HOURS	Contact Hours								Hours in autonomous work
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
150	50	25	-	-	-	-	-	-	75

Prerequisites (if applicable): not applicable

LEARNING OUTCOMES (knowledge, skills and competence)

Goals

- A. Defining the concept of biomechanics and its perspective;
- B. Understanding the relationship between biomechanics and occupational performance
- C. Defining and developing biomechanics important concepts: cinematic, kinetic, fluid mechanisms;
- D. Describing the fundamentals of human movement. Competences to develop:
 - Shows knowledge and understanding of the structure and functions of the human body on a biological and physical level and of the way these structures and functions interact with the development of the activity and task;
 - Solves problems through a logical thinking and critical analysis and creativity, showing ability to produce assertive conclusions and sustained decisions

CONTENTS

1. Biomechanics: definition and perspective;
2. The relationship between biomechanics and occupational performance;
3. Biomechanics concepts: cinematic, kinetic and fluid mechanisms;
4. Fundamentals of the human movement (movement basic concepts; skeleton, muscular and neurological considerations about movement).

DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

The syllabus linked to the goals (between brackets) are:

1. Biomechanics: definition and perspective; (A)
2. The relationship between biomechanics and occupational performance; (B)
3. Biomechanics concepts: cinematic, kinetic and fluid mechanisms; (C)
4. Fundamentals of the human movement: movement basic concepts; skeleton, muscular and neurological considerations about movement. (D)

TEACHING METHODOLOGIES

A.Theoretical lessons, using expositive and demonstrative methods;

B.Problem resolution with discussion;

DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES

A.Defining the concept of biomechanics and its perspective; (A)

B.Understanding the relationship between biomechanics and occupational performance (A;B)

C.Defining and developing biomechanics important concepts: cinematic, kinetic, fluid mechanisms; (A)

D.Describing the fundamentals of human movement. (A; B)

EVALUATION METHODS

Continuous Assessment (CA) - 1 written test (concepts of biomechanics and their relationship with occupational therapy); 1 individual written test (fundamentals of human movement). In each of these tests the minimum admissible rating is 8 points.

Course unit (CU) approval: minimum grade of 10 points, in the weighted average of the evaluation tests. Only the final CU classification is obtained by rounding.

Final Assessment in Normal Season (NS) - Applies to students who do not opt for CA (same type of assessment methods; minimum admissible rating: 10 points for each assessment method). Only the final CU classification is obtained by rounding.

Final Assessment in Resouse Season (RS) - Applies to students who have not passed CA and Final Assessment in NS (same type of assessment methods; minimum admissible rating: 10 points for each assessment method. Improvements are contemplated in Final Assessment at RS.

MAIN BIBLIOGRAPHY

Esperança Pina, J. A. (2017). Anatomia humana da locomoção (5ª ed.). Lisboa: Edições Lidel.

Kapanji, A. (2019). The physiology of the joints- vol 1:the upper limb (7ª ed). Scotland: Handspring Publishing Limited.

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Spaulding, S. (2005). Meaningful motion: biomechanics for occupational therapists. UK: Elsevier Churchill Livingstone

Vanputte, C., Russo, A., & Regon, J. (2016). Anatomia e fisiologia de Seeley (10ª ed.). Porto Alegre: AMGH Editora, Ltda.

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