

Course Unit	Immunology	Field of study	Biology and Biochemistry
Bachelor in	Dietetics and Nutrition	School	School of Health
Academic Year	2019/2020	Year of study	2
Type	Semestral	Semester	2
Level	1-2	ECTS credits	3.0
Code	8149-501-2205-00-19		
Workload (hours)	81	Contact hours	T - , TP 30 , PL - , TC - , S - , E - , OT 5 , O -

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)

#### Learning outcomes and competences

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

1. Understand what is a Immune system and his role in organisms.
2. Know organs, cells and molecules of immune system and theirs role in the immune response.
3. Summarize the knowledge of immune system and explain how is important in pathogenesis and auto-immune diseases.

#### Prerequisites

Before the course unit the learner is expected to be able to:  
Not applicable

#### Course contents

Cells and organs of immunity system ; antigens, antibody and TCR. Complement. Humoral and cellular response. Immune response regulation. Mechanisms of hypersensibility, tolerance/auto-immunity.

#### Course contents (extended version)

1. Overviews of the immune system. Historical perspective.
2. Nature and specific immunity. Humoral and cellular immunity
3. Hematopoiesis Cells of the immune system Organs of the immune system
4. Antigen processing and presentation . MHC.
5. Antigen – antibody . Immunogenicity versus antigenicity Epitopes and haptens. BCR receptor
6. T e B-cells generation, maturation and differentiation . TThymic selectiyon of the T-cell
7. Structure of class I and Class II molecules of MHC. Peptide binding . Polymorphism of MHC.
8. Immune effector mechanisms. Cytokynes and complement system.
9. Cell-mediated effector responses Cytotoxic T cells . Natural killer cells. Inflammation.
10. Hypersensitive reaction (typeI, II, III, IV).
11. The role of immune system in: Autoimmunity, transplantation and cancer)
12. Food allergy . Food allergens. Risk factors. Food allergy and intolerance in children

#### Recommended reading

1. Arosa, F. A. , Cardoso, E. M. , Pacheco, F. C. (2012). Fundamentos de imunologia. Lisboa: Lidel
2. Kindt, T. J. , Goldsby, R. A. , Osborne, B. A. (2007). Kuby Immunology. New York : W. H. Freeman and Company
3. Jorge, A. O. C. (2006). Princípios de Microbiologia e Imunologia. São Paulo: Livraria Santos Editora
4. Roitt, I. , Brostoff, J. , Male, D. (2003) Imunologia. Rio de Janeiro : Guanabara Koogan

#### Teaching and learning methods

Conventional lectures; use of power point presentations and internet resources. Course materials available in the e-learning plataform.

#### Assessment methods

- Final written exam - (Regular, Student Worker) (Final, Supplementary, Special)

#### Language of instruction

Portuguese

#### Electronic validation

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