

## **ΝΠ18-32 Immunobiology**

**Course code number: ΝΠ18-32**

**Curriculum: Undergraduate**

**Semester: 4<sup>th</sup>**

### **Course Type**

	Background/General knowledge
<b>X</b>	Scientific area (pharmacy)

**Credit Units (ECTS): 4**

**Lectures (hours/week): 2**

**Tutorials (hours/week):-**

**Laboratory work (hours/week): -**

**Aims of the course:** To provide knowledge the higher organisms capacity that through the molecular and cellular elements of the immune system, develop mechanisms recognizing "self" from "non-self" components of the host-organism or the environment and exhibit natural innate or adaptive defense mechanisms leading in their neutralization or their selective tolerance. To familiarize students with the complex host defense mechanisms against external pathogens or infective environmental factors.

**Skills:** By the end of this course, the students should be able to recognize the molecular and cellular components of immune system in association with knowledge using antibodies or antigens as basic tools in prevention-protection against pathogens, in diagnosis, in research as well as in the development of immunotechnology.

Tutors: Prof. Theodoros Sklaviadis  
Prof. Minas Yiangou  
Asst Prof. Konstantinos Xanthopoulos

**Teaching methods:** Lectures

### **Contents of the course:**

1. Basic principles, historical aspects and evolution.
2. Organization of immune system and lymphatic system.
3. Host-defense mechanisms, Active (Vaccines) and passive (antisera) immunization.
4. Structure and function of antibodies. Genetic and molecular basis of antibody variation.
5. Immunogens/antigens.
6. Complement
7. Mechanisms of humoral and cellular immunity (molecular and cellular regulation-immunotolerance).
8. Major Histocompatibility complex and Transplantations.
9. Immunobiology of cancer – Autoimmunity.
10. Future and prospective.

### **Proposed literature:**

**1. IMMUNOBIOLOGY** – Lygeri Hadjipetrou-Kourounakis -UNIVERSITY STUDIO PRESS 1987

2. **IMMUNOLOGY** -RICHARD GOLDSBY, THOMAS KINDT, BARBARA OSBORNE, JANIS KUBY-GREEK: ECATERINI GAITANAKI, CONSTANTINOS BAXEVANIS – MEDICAL EDITIONS P.C> PASCHALIDIS

**Educational activities:** Lectures, discussion with the students in every lecture.

**Evaluation process and methods:** Examination of the course can be done by a final written examination at the end of the semester. The duration of the examination is 3 hours.

**Use of TIC / Electronic distribution of the lectures**

Powerpoint presentation is used in the lectures and supporting material concerning immunology is located at <https://elearning.auth.gr/>

**Teaching:** Teaching of this course is accomplished through lectures (2 hours per week)

**Lectures.** Lectures are given in the lecture room Δ12 for 13 weeks

<b>Lecture</b>	<b>Title</b>	<b>Tutor</b>
<b>1</b>	Basic principles of immunity, historical aspects and evolution of immunobiology	Minas Yiangou
<b>2</b>	Organization of immunology system – cells and molecules of the immune system	Minas Yiangou
<b>3</b>	Organization of immunology system – tissues and organs of the immune system	Minas Yiangou
<b>4</b>	Host resistance: Innate and adaptive/Cellular and humoral immune response/Active and passive immunization (vaccines-antisera)	Minas Yiangou
<b>5</b>	Molecules involved in immune responses/Immunogens-Antigens Complement & immune responses	Minas Yiangou
<b>6</b>	Molecules involved in immune responses/Antibodies-Monoclonal antibodies (structure-activity-gene expression)	Minas Yiangou
<b>7</b>	Receptors of immune cells – Major Histocompatibility Complex and immune responses	Minas Yiangou
<b>8</b>	Mechanisms of humoral immunity/Stimulation and activation of B-lymphocytes	Konstantinos Xanthopoulos
<b>9</b>	Mechanisms of cellular immunity/Stimulation and activation of T-lymphocytes	Minas Yiangou
<b>10</b>	Mechanisms of immunotolerance and immunoregulation	Konstantinos Xanthopoulos
<b>11</b>	Histocompatibility and immunobiology of transplantation	Konstantinos Xanthopoulos
<b>12</b>	Autoimmunity/Immune system & cancer	Theodoros Sklaviadis
<b>13</b>	Future and prospective	Theodoros Sklaviadis