

2017/2018

**BASIC AND CLINICAL IMMUNOLOGY COURSE
FOUR YEAR MD PROGRAM, SECOND YEAR
DETAILED PROGRAM**

Address:

Department of Immunology
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Course coordinator: Prof. Jan Żeromski, M.D., Ph.D.
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Teachers:

Prof. Jan Żeromski, M.D., Ph.D.
Prof. Jan Sikora, Ph.D.
Assoc. prof. Grzegorz Dworacki, M.D., Ph.D.
Kosma Woliński, MD
Anna Olewicz-Gawlik, M.D., Ph.D. , tel. 793263221
Mariusz Kaczmrek, Ph.D.
Maciej Majcherek, M.D., tel. 664758928
jakub Owoc, M.D., tel. 790599611
Małgorzata Łagiedo, M.Sc.
Bartosz Brzezicha M.Sc.
Mateusz Madejczyk, M.D., Ph.D., tel. 502680933
Alicja Kalinowska-Łyszczarz, M.D., Ph.D., tel. 606167631
Maciej Boruczowski, M.Sc.

Recommended books: (newest editions):

1. Abbas, Lichtman: Basic Immunology. Saunders. (recommended)
2. Żeromski ed.: Introduction to Clinical Immunology. Poznan University Press 2009 (Basic, Laboratory, Clinical Immunology)
3. Chapel: Essentials of Clinical Immunology. Blackwell. (Clinical Immunology)

Topics and handouts:

The main topics are listed below in the course program.

Detailed topics can be found in corresponding chapters of the “**Introduction to Clinical Immunology**” textbook.

4-year M.D program, 2nd year, 2017/2018 Regulations of The Immunology Course

The course encompasses lectures (22 hrs), basic and laboratory classes (10 hrs) and seminars on clinical immunology (28 hrs).

A. Lectures

They cover up-to-date knowledge of basic and clinical immunology indispensable to understand practicals.

Attendance is not compulsory but highly recommended.

During the lectures students write a midterm test that covers the material covered by so far given lectures.

The test cannot be repeated, and obtained scores by the student will be added to the total sum achieved at final examination. Absence from the test results in obtaining no points.

B. Basic and laboratory immunology

The classes are devoted to introduce immunologic diagnostic methods, five days, two hours daily.

Participation in all practicals is obligatory.

In case of absence on one day student should be prepared to answer for oral questions from this subject to the involved assistant. Absence from two or more practicals excludes the student from course.

Practicals end with a test that covers the activities of five days.

The test cannot be repeated, and obtained scores by the student will be added to the total sum reached at final examination. Absence from the test results in obtaining no points.

C. Clinical Immunology

Fourteen seminars, two hours daily. They include a short introduction to daily topic, presentation of clinical cases and laboratory data of given disease, discussion and conclusion of diagnosis. Students must be previously prepared for these classes. It is assumed that students will actively contribute in the presentation and discussion of these topics.

Participation in all 14 seminars is obligatory. In case of absence on one day student should be prepared to answer for oral questions from this subject to the involved assistant. Absence from 2 or more days requires repetition of the whole course in the next academic year.

General

- The attendance must be confirmed by the assistant or student's signature on the attendance list. Students who exceed allowed absences will not be allowed to the final test and will be reported to the Dean's Office.
- Any unjustified delay from the class above 10 minutes will be considered as an absence.
- The results of the final exam will be announced on the website of the department and reported to the Dean's Office.
- Cheating or other kind of order disturbance on the exam may result in dismissing of the student and will be reported to the Dean's Office.
- Any issues that are not mentioned in these regulations are subjected to the General Regulations of the University

The final test covers the whole information obtained during the course i.e. lectures and practicals. It consists of 100 multiple choice written test questions.

In the final evaluation scores from the midterm, practicals' and final tests will be added to form a total pool of 140 points, out of this, at least 60% (84 points) score is needed to pass the examination and get a credit.

If the student doesn't attend the final test or fail to obtain enough points, then this will count as failed 1st chance and will be noted in the index as unsatisfactory (2.0) mark.

Second and third chances of the final test will consist of 100 questions. Scores of previous tests will not count. In order to pass the student should answer correctly at least 60 questions.

Failure on three chances will disqualify the student from the course. This will result in the necessity of repeating the course on the next academic year after the assent of the Dean.

4-year program, 2nd year, 2017/2018 - Lectures

- L1:** Jan Żeromski, 26.09.2017 Tue 16⁰⁰-17³⁰ Coll. Anatomicum. Horoszkiewicz Hall
The immune system: adaptive vs. innate immunity, features of innate and adaptive immune system, acute phase proteins, complement system, pattern recognition, cytokines, structures and cells involved, development of immune system, evolution of immunity – basic facts, Novel approaches in studying immunology.
- L2:** Jan Żeromski, 02.10.2017 Mon 16⁰⁰-17³⁰ Coll. Stom., A205
Antigen (Ag) and its recognition: Ag structure, haptens, Ag receptor molecules, Ag processing, presentation and recognition by B and T cells, superantigens, heat shock proteins.
- L3:** Grzegorz Dworacki, 10.10.2017 Tue 11⁰⁰-12³⁰ Coll. Stom., A205
Monoclonal antibodies. CD classification. Cells involved in the immune response, cell migration and homing, the generation of diversity: different cell types and their co-operation, cell activation, the role of cytokines and cell adhesion molecules, antibody and immunoglobulin variability, L and H chain gene recombination, genes and structure of cell antigen receptor.
- L4:** Jan Żeromski, 17.10.2017 Tue 11⁰⁰-12³⁰ Coll. Stom., A205
Effector mechanisms of immunity: humoral mechanisms, cell-mediated immune reactions. Activation and effector functions of lymphocytes and macrophages, molecular mechanisms of cytotoxicity, NK cells, cytotoxic mechanisms, the cytokine network.
- L5:** Jan Żeromski, 24.10.2017 Tue 11⁰⁰-13³⁰ Coll. Stom., A205
Regulation and manipulation of the immune response: mechanisms, the role of T cells (Treg), NKT cells, telomers, idiotypes, neuroendocrine factors, genetic control, immunomodulation, vaccines).
- L6+Midterm test:** Jan Żeromski, 07.11.2017 Tue 11⁰⁰-12³⁰ Hospital, Przybyszewskiego 49, Zeyland Lecture Hall
Immunology of transplantation: genetics, MHC antigen inheritance and expression, mechanisms of graft rejection and its prevention, kidney transplantation and its types and types of rejection, graft vs. host disease, clinical aspects of transplantation, materno-fetal interactions, perspectives of xenografting.
- L7:** Jan Żeromski, 14.11.2017 Tue 11⁰⁰-12³⁰ Coll. Stom., A205
Immunology of infection: immunity to viruses, bacteria and fungi, immune aspects of parasitic infections evasion of immune response by pathogens, immunology due to infection.
- L8:** Grzegorz Dworacki, 21.11.2017 Tue 11⁰⁰-12³⁰ Hospital, Przybyszewskiego 49, Zeyland Lecture Hall
Tumor immunology: tumor antigens, anti-tumor immunity, immunological surveillance and immunoediting, tumor microenvironment, escaping immune mechanisms, immunosuppression, immunodiagnosis, immunotherapy, gene therapy.
- L9:** Grzegorz Dworacki, 28.11.2017 Tue 11⁰⁰-12³⁰ Coll. Anatomicum. Nencki Lecture Hall
Hypersensitivity: definition, types and characteristics of four types, diseases associated with hyperseisitivity. Allergy: clinical entities, diagnostic aspects.
- L10:** Grzegorz Dworacki, 05.12.2017 Tue 11⁰⁰-12³⁰ Coll. Anatomicum. Nencki Lecture Hall
Immunological tolerance and unresponsiveness: T- and B-cell tolerance, central vs. peripheral t., manipulation of tolerance, immunologically privileged sites ,artificial induction of tolerance, immunological ignorance, significance of tolerance in medicine.
- L11:** Jan Żeromski, 12.12.2017 Tue 11⁰⁰-12³⁰ Coll. Anatomicum, Lecture Hall 16
Immunodeficiencies: primary vs. secondary IDs, ten alarming symptoms of ID, pathomechanisms, classification, B cell -T cell ID, complement deficiencies, defects of phagocytic cells and cell adhesion, chromosomal breakage syndromes, secondary ID, AIDS). Some unsolved problems in immunology.

Basic immunology - Labs (B1-B5)

B1: Humoral immunology – Małgorzata Łagiedo MŁ

1. Preview of humoral immunity - immunoglobulins and complement.
2. Introduction to immunological assays.
3. Methods for the assessment of humoral immunity and other proteins present in body fluids – quantitative assays, antibody specificity assays, screening for autoantibodies.

B2: Cellular immunology – Immunophenotype – Maciej Boruckowski MB

1. Preview of the cellular immunity
2. Biological materials available for examination and principles of sampling
3. Means of cell isolation and methods of assessment
4. Applications in medical practice

B3: Cellular immunology – Mariusz Kaczmarek MK

1. Preview
2. Functional tests of lymphocytes
3. Evaluation of the function of phagocytic cells (phagocytosis, oxidative burst, migration).
4. Evaluation of the function of lymphocytes
5. In vivo tests
6. Clinical application of cellular functional tests

B4: Detection of proteins and nucleotides in situ – Bartosz Brzezicha BB

1. Types of tissue samples suitable for the assessment
2. Means of tissue preservation and/or fixations
3. Possibilities of immunological evaluation of tissue sections
4. Molecular methods in situ
5. Examples of applications

B5: Diagnostic immunology – Małgorzata Łagiedo MŁ

1. The basic algorithm in diagnosing autoimmune diseases
2. The basic algorithm in diagnosing immune deficiencies
3. Interpretation of obtained results of tests.

Clinical immunology - seminars (C1-C14)

Detailed contents according to the handbook “Introduction to Clinical Immunology” and “Essentials of Clinical Immunology”.

<u>Topic</u>	<u>Teacher</u>	<u>Alternative</u>
C1. Autoimmune connective tissue diseases	G. Dworacki GD	/A. Olewicz AO
C2. Endocrine specific autoimmunity	J. Owoc JO	
C3. Immunohematology	M. Majcherek MMj	
C4. Neuroimmunology	A. Kalinowska-Łyszczarz AŁ	
C5. Immunology of respiratory tract	J. Owoc JO	/A. Olewicz AO
C6. Immunology of gastrointestinal tract	J. Żeromski JŻ	/A. Olewicz AO
C7. Immunopathology of the kidney	G. Dworacki GD	
C8. Immunomodulation and vaccines	A Olewicz AO	
C9. Immunology of reproduction	M. Madejczyk MMd	
C10. Immunology of cardiovascular disorders	A. Olewicz AO	
C11. Allergy	A. Olewicz AO	
C12. Lymphoproliferative diseases, immunological approach	J. Żeromski JŻ	
C13. Selection and interpretation of immunological assays	M. Boruckowski MB	/M. Majcherek MMj
C14. Immunopathology of the liver	J. Żeromski JŻ	

4-year program, 2nd year, 2017/2018 - Labs

Groups	Basic immunology topics B1-B5				
S1a	28.09 15.00-16.30 B1 (MŁ)	10.10 13.00-14.30 B4 (BB)	17.10 13.00-14.30 B3 (MK)	24.10 13.00-14.30 B2 (MB)	2.11 13.30-15.00 B5+test (MŁ)
S1b	28.09 15.00-16.30 B2 (MB)	10.10 13.00-14.30 B1 (MŁ)	17.10 13.00-14.30 B4 (BB)	24.10 13.00-14.30 B3 (MK)	2.11 13.30-15.00 B5+test (MŁ)
S2a	28.09 16.30-18.00 B1 (MŁ)	10.10 14.30-16.00 B4 (BB)	17.10 14.30-16.00 B3 (MK)	24.10 14.30-16.00 B2 (MB)	2.11 15.00-16.30 B5+test (MŁ)
S2b	28.09 16.30-18.00 B2 (MB)	10.10 14.30-16.00 B1 (MŁ)	17.10 14.30-16.00 B4 (BB)	24.10 14.30-16.00 B3 (MK)	2.11 15.00-16.30 B5+test (MŁ)
S3a	5.10 15.00-16.30 B1 (MŁ)	12.10 13.30-15.00 B2 (MB)	19.10 13.30-15.00 B3 (MK)	26.10 13.30-15.00 B4 (BB)	7.11 13.00-14.30 B5+test (MŁ)
S3b	5.10 15.00-16.30 B3 (MK)	12.10 13.30-15.00 B1 (MŁ)	19.10 13.30-15.00 B4 (BB)	26.10 13.30-15.00 B2 (MB)	7.11 13.00-14.30 B5+test (MŁ)
S4a	5.10 16.30-18.00 B1 (MŁ)	12.10 15.00-16.30 B2 (MB)	19.10 15.00-16.30 B3 (MK)	26.10 15.00-16.30 B4 (BB)	7.11 14.30-16.00 B5+test (MŁ)
S4b	5.10 16.30-18.00 B3 (MK)	12.10 15.00-16.30 B1 (MŁ)	19.10 15.00-16.30 B4 (BB)	26.10 15.00-16.30 B2 (MB)	7.11 14.30-16.00 B5+test (MŁ)

Place: Dept. of Immunology, ul. Rokietnicka 5D, 1st floor, room A (B2, B3, B5), room B (B1, B3)

4-year program, 2nd year, 2017/2018 - Seminars

	S1	S3	S2	S4
Topics C1-C14	10.11.2017 13 ³⁰ -15 ⁰⁰ C1 GD 15, Coll. Anat.	10.11.2017 15 ⁰⁰ -16 ³⁰ C1 GD 15, Coll. Anat.	10.11.2017 13 ³⁰ -15 ⁰⁰ C2 JO 16, Coll. Anat.	10.11.2017 15 ⁰⁰ -16 ³⁰ C2 JO 16, Coll. Anat.
	17.11.2017 13 ³⁰ -15 ⁰⁰ C2 JO A210, Coll.Stom.	17.11.2017 15 ⁰⁰ -16 ³⁰ C2 JO A210, Coll.Stom.	17.11.2017 13 ³⁰ -15 ⁰⁰ C1 GD 105, Chmiela	17.11.2017 15 ¹⁵ -16 ⁴⁵ C1 GD 105, Chmiela
	24.11.2017 13 ³⁰ -15 ⁰⁰ C3 MMj 15, Coll. Anat.	24.11.2017 15 ⁰⁰ -16 ³⁰ C3 MMj 15, Coll. Anat.	24.11.2017 13 ³⁰ -15 ⁰⁰ C5 JO A210, Coll.Stom.	24.11.2017 15 ⁰⁰ -16 ³⁰ C5 JO A210, Coll.Stom.
	01.12.2017 13 ³⁰ -15 ⁰⁰ C5 JO A210, Coll.Stom.	01.12.2017 15 ¹⁵ -16 ⁴⁵ C5 JO A210, Coll.Stom.	01.12.2017 13 ⁴⁵ -15 ¹⁵ C3 MMj 15, Coll. Anat.	01.12.2017 15 ¹⁵ -16 ⁴⁵ C3 MMj 15, Coll. Anat.
	08.12.2017 13 ³⁰ -15 ⁰⁰ C4 Ał 105, Chmiela	08.12.2017 15 ¹⁵ -16 ⁴⁵ C4 Ał 15, Coll. Anat.	08.12.2017 13 ³⁰ -15 ⁰⁰ C6 JŻ SJO	08.12.2017 15 ⁰⁰ -16 ³⁰ C6 JŻ SJO
	15.12.2017 13 ⁴⁵ -15 ¹⁵ C6 JŻ 15, Coll. Anat.	15.12.2017 15 ¹⁵ -16 ⁴⁵ C2 6 JŻ 15, Coll. Anat.	15.12.2017 13 ³⁰ -15 ⁰⁰ C4 Ał SJO	15.12.2017 15 ⁰⁰ -16 ³⁰ C4 Ał SJO
	12.01.2018 13 ³⁰ -15 ⁰⁰ C7 GD 15, Coll. Anat.	12.01.2018 15 ⁰⁰ -16 ³⁰ C7 GD 15, Coll. Anat.	12.01.2018 13 ³⁰ -15 ⁰⁰ C8 AO SJO	12.01.2018 15 ⁰⁰ -16 ³⁰ C8 AO SJO
	19.01.2018 13 ³⁰ -15 ⁰⁰ C8 AO 106, Chmiela	19.01.2018 15 ⁰⁰ -16 ³⁰ C8 AO 106, Chmiela	19.01.2018 13 ³⁰ -15 ⁰⁰ C7 GD 15, Coll. Anat.	19.01.2018 15 ⁰⁰ -16 ³⁰ C7 GD 15, Coll. Anat.
	26.01.2018 13 ³⁰ -15 ⁰⁰ C9 MMd 1, Coll. Anat.	26.01.2018 15 ⁰⁰ -16 ³⁰ C9 MMd 1, Coll. Anat.	26.01.2018 13 ⁴⁵ -15 ¹⁵ C10 AO 15, Coll. Anat.	26.01.2018 15 ¹⁵ -16 ⁴⁵ C10 AO 15, Coll. Anat.
	02.02.2018 13 ³⁰ -15 ⁰⁰ C10 AO 15, Coll. Anat.	02.02.2018 15 ⁰⁰ -16 ³⁰ C10 AO 15, Coll. Anat.	02.02.2018 13 ³⁰ -15 ⁰⁰ C9 MMd Coll.Chmiela107	02.02.2018 15 ⁰⁰ -16 ³⁰ C9 MMd Coll.Chmiela107
	09.02.2018 13 ³⁰ -15 ⁰⁰ C11 AO 1, Coll. Anat.	09.02.2018 15 ⁰⁰ -16 ³⁰ C11 AO 1, Coll. Anat.	09.02.2018 13 ³⁰ -15 ⁰⁰ C12 JŻ 15, Coll. Anat.	09.02.2018 15 ⁰⁰ -16 ³⁰ C12 JŻ 15, Coll. Anat.
	16.02.2018 13 ³⁰ -15 ⁰⁰ C12 JŻ 15, Coll. Anat.	16.02.2018 15 ⁰⁰ -16 ³⁰ C12 JŻ 15, Coll. Anat.	16.02.2018 13 ³⁰ -15 ⁰⁰ C11 AO 16, Coll. Anat.	16.02.2018 15 ⁰⁰ -16 ³⁰ C11 AO 16, Coll. Anat.
	23.02.2018 13 ³⁰ -15 ⁰⁰ C13 MB 109, Chmiela	23.02.2018 15 ¹⁵ -16 ⁴⁵ C13 MB 16, Coll. Anat.	23.02.2018 13 ³⁰ -15 ⁰⁰ C14 JŻ 15, Coll. Anat.	23.02.2018 15 ⁰⁰ -16 ³⁰ C14 JŻ 15, Coll. Anat.
	02.03.2018 13 ³⁰ -15 ⁰⁰ C14 JŻ 15, Coll. Anat.	02.03.2018 15 ⁰⁰ -16 ³⁰ C14 JŻ 15, Coll. Anat.	02.03.2018 13 ³⁰ -15 ⁰⁰ C13 MB 109, Chmiela	02.03.2018 15 ⁰⁰ -16 ³⁰ C13 MB 109, Chmiela

Anat.: Coll. Anatomicum ul. Świącickiego 6,
 Chmiela: Collegium Chmiela ul. Świącickiego 4,
 Coll.Stom.: Collegium Stomatologicum, ul. Bukowska 70
 SJO: Department of Foreign Lang., ul. Marcelesińska 27

FINAL EXAMINATION

1st take: 20.03.2018, 11:30
 2nd take: 04.04.2018, 12:00
 3rd take: Will be scheduled later