# SUBJECT OUTLINE

## 1. Programme of study description

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| **1.1.** | **THE "CAROL DAVILA" UNIVERSITY OF MEDICINE AND PHARMACY** |
| **1.2.** | **THE FACULTY OF MEDICINE / THE CLINICAL DEPARTMENT 3** |
| **1.3.** | **DISCIPLINE : TRANSPLANT IMMUNOLOGY** |
| **1.4.** | **DOMAIN OF STUDY: Healthcare – regulated sector within the EU** |
| **1.5.** | **CYCLE OF STUDIES: BACHELOR'S DEGREE** |
| **1.6.** | **PROGRAMME OF STUDY: MEDICINE** |

## 2. Subject description

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| **2.1.** | **Name of the subject/compulsory subject/elective subject within the discipline:** | | | | | | |
| **2.2.** | **Location of the discipline: Fundeni Clinical Institute** | | | | | | |
| **2.3.** | **Course tenured coordinator: Prof. Univ. Dr. Constantinescu Ioana** | | | | | | |
| **2.4.** | **Practicals/clinical rotations tenured coordinator:** | | | | | | |
| **2.5. Year of study** | IV | **2.6. Semester** | VIII | **2.7. Type of assessment** | exam | **2.8. Subject classification** | OPT |

## 3. Total estimated time (hours/semester of didactic activity) – teaching module

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| **Number of hours per week** | 2 | **Out of which: course** | 2 | **Clinical rotation** | |
| **Total number of hours from curriculum** | 14 | **Out of which: course** | | **Clinical rotation** | |
| **Distribution of allotted time** | **7** week | | | | **Hours** |
| **Study from textbooks, courses, bibliography, and student notes** | | | | | 15 |
| **Additional library study, study on specialized online platforms and field study** | | | | | 20 |
| **Preparing seminars / laboratories, assignments, reports, portfolios and essays** | | | | | |
| **Tutoring** | | | | | |
| **Examinations** | | | | | 2 |
| **Other activities** | | | | | |
| **Total hours of individual study** | | | | | |
| **Number of credit points** | | | | | 2 |

## 4. Prerequisites (where applicable)

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| **4.1. of curriculum** | Basic knowledge of anatomy and physiology |
| **4.2. of competencies** | - |

## 5. Requirements (where applicable)

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| **5.1. for delivering the course** | Multimedia projector, projection screen |
| **5.2. for delivering the clinical rotation** | Laboratory of immunogenetics |

## 6. Acquired specific competencies

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| **Professional competencies (expressed through knowledge and skills)** | At the end of the transplant immunology course, the student must know:<br>- the meaning of specific terms<br>- immunological criteria of donor-recipient compatibility<br>- the mechanisms of the rejection phenomenon in solid organ transplantation<br>- dosage of the treatment |

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| | - HLA genotyping methodology |
| **Transversal competencies (of role, of professional and personal development)** | - Skills to work in the laboratory<br>- Performance of molecular biology techniques<br>- the ability to present a scientific paper in the field of immunology |

**7. Subject learning objectives (based on the scale of acquired specific competencies)**

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| **7.1. General learning objective** | - understanding the mechanism of the rejection phenomenon<br>- knowledge of the dynamics of transplant immunology |
| **7.2. Specific learning objectives** | - knowledge of the donor-recipient immunological conditions that make it possible to carry out solid organ transplantation and peripheral HSC |

**8. Content**

| **8.1. Course** | **Teaching methods** | **Observations** |
|---|---|---|
| Course 1 - Immunogenetics and transplantation | | 1 hour |
| Course 2 - Kidney transplant | | 1 hour |
| Course 3 -Liver and heart transplantation | | 1 hour |
| Course 4 - Transplantation of hematopoietic stem cells | | 1 hour |
| Course 5 - Lung transplantation, hand, cornea and skin transplantation | | 1 hour |
| Course 6 - Immunosuppression | | 1 hour |
| Course 7 - Posttransplant management | | 1 hour |
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| **8.2. Clinical rotation** | **Teaching methods** | **Observations** |
| CR 1 - Extraction of nucleic acids | | 1 hour |
| CR 2 - HLA genotyping method | | 1 hour |
| CR 3 - Methods of screening and identification of cytotoxic antibodies | | 1 hour |
| CR 4 - The Crossmatch test | | 1 hour |
| CR 5 - Determining the polymorphism of Kir genes and cytokine agents by the SSP method | | 1 hour |
| CR 6 - Posttransplant immunosuppressive treatment monitoring | | 1 hour |
| CR 7 - Monitoring the reactivation of latent herpes viruses and post-transplant liver viruses | | 1 hour |

**Bibliography for course and clinical rotation**

**Imunologie de Transplant an IV (optional):**
Cursul predat este transmis anual, actualizat si continuu imbunatatit, in format electronic, bibliotecii UMF „Carol Davila"

1. American Society for Histocompatibility and Immunogenetics, http://www.ashi-hla.org
2. HLA Beyond tears. Rodey Glenn E., 2000
3. Genetics and molecular genetics of the MHC, reviews in Immunogenetics, Rhodes, D.A., Trowsdale, J., 1999.
4. Baxter-Lowe, L.A, and Colombe, B.W., Histocompatibility Testing (19), in Lange Medical Immunology, Tenth Edition, 2001.
5. Clinical Diagnosis and management by Laboratory Methods, J. Bernard Henry, M.D., twentieth ed., 2001.
6. Callaghan, C. J., and Bradley, J. A., Current status of Renal Transplantation Cpt. 1 in Transplantation Immunology Methods and Protocols edited by Philip Horniclx, Marlene Rose, Humana Press In 2006.
7. Cant Andrew J, Galloway Angela, Jackson Graham: Practical Hematopoietic Stem Cell Transplantation, Blackwell Publishing Ltd. 2007
8. Cecka, J.M. and Reed F.E., Histocompatibility Testing, Cross-Matching, and Allocation of Kidney Transplants in Handbook of Kindey Transplantation, Fourth Edition, Gabriel M. Danovitch, 2005 by Lippincott Williams & Wilkins.
9. Ileana Constantinescu: Imunologia transplantului, Editura Universitara "Carol Davila", Bucuresti, 2009.
10. Chua, M.S., Sarwal, M. Microarrays: New tools for transplantation research. Pediatric Nephrology, 18:319-327, 2003.
11. Danovitch, G.M., Handbook of Kindey Transplantation Fourth Edition, Lippincott Williams & Wilkins, 2005.
12. Forsythe John L.R: Transplantation, Fourth Edition, Saunders Elsevier, 2009.

**9. Corroboration of the subject content with the expectations of the representatives of the epistemic community, professional associations, and major employers in the field of the programme of study**

The result of training in this discipline is the appropriate training of students in the field of transplant immunology, ensuring the premises of a foundation of clinical thinking with applicability in all medical specialties.

**10. Assessment**

| Type of activity | Assessment criteria | Assessment methods | Assessment weighting within the final grade |
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| **Course** | Knowledge of the theoretical notions of the subject | written exam | 75% |
| **Clinical rotation** | Knowledge of work techniques in transplant immunology | practical exam | 25% |

| **Minimum performance standard** |
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| At least 50% for each component of the evaluation |

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| **Date of filing 15.09.2021** | **Signature of the course tenured coordinator** | **Signature of the seminar tenured coordinator** |

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| **Date of approval in the Council of the Department:** | **Signature of the Head of the Department** |