**description of the course of study**

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| **Course code** | **0912-7LEK-F-14-OO** |
| **Name of the course in** | Polish | **Immunologiaonkologiczna** |
| English | **Oncological immunology** |

1. **LOCATION OF THE course OF STUDY within the system of studies**

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| **1.1. Field of study** | medicine |
| **1.2. Mode of study** | Full-time |
| **1.3. Level of study** | Uniform Master’s studies |
| **1.4. Profile of study\*** | General academic |
| **1.5. Person preparing the course description** | dr hab. n. med. Marcin Pasiarski, prof. UJK |
| **1.6. Contact** | marcinpasiarski@gmail.com |

1. **General characteristicS of the course of study**

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| **2.1. Language of instruction** | English |
| **2.2. Prerequisites\*** |  |

1. **DETAILED CHARACTERISTICS OF THE COURSE OF STUDY**

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| * 1. **Form of classes**
 | lecture – 15 hours (including 5 hours e-learning) |
| * 1. **Place of classes**
 | Teaching room of the Department of Hematology, Holycross Cancer Center |
| * 1. **Form of assessment**
 | Credit with grade |
| * 1. **Teaching methods**
 | Practical Classes, Case studies, Discussion, Seminars |
| * 1. **Bibliography**
 |  **Required reading** | * Basic immunology Function and disorders of the immune system 5e (5th Edition) by Abul K. Abbas, Shiv Pillai
* Immunology: A Short Course (Coico, Immunology) 7th Edition by Richard
 |
|  **Further reading** | * Microbiology and Immunology (Board Review Series) Sixth Edition by Louise Hawley MD, Benjamin Clarke Ph.D, Richard J. Ziegler PhD
* Autoantibodies, 3rd Edition (editors: Shoenfeld, Meroni, Gershwin)
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1. **Objectives, syllabus CONTENT and intended LEARNING outcomes**

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| * 1. **Course objectives *(lecture)***

The student should acquire knowledge in the scope of: C1. TUMOR IMMUNOLOGY (cell types involved in tumor recognition and rejection, the "immune synapse”, tumor evasion of immune surveillance); lectureC2. CYTOKINES AND COSTIMULATORY RECEPTORS IN CANCER TREATMENT – CURRENT KNOWLEDGE AND PERSPECTIVES; lectureC3. CHECKPOINT INHIBITORS IN CANCER TREATMENT (CLTA-4, PD-1/PDL-1/2, other potential targets, combination strategies); lectureC4. MANIPULATING T CELLS IN ANTICANCER THERAPY (chimeric antigen receptors, ex vivo expansion of tumor-infiltrating lymphocytes, CD3-directed therapies); lecture C5.ANTICANCER VACCINES AND ONCOLYTIC VIRUSES; lecture C6. THERAPIES DIRECTED AT OTHER CELL TYPES IN TUMOR MICROENVIRONMENT (natural killer  cells, macrophages, IDO); lecture C7. IMMUNE RESPONSE CRITERIA AND PREDICTORS OF RESPONSE TO IMMUNE-BASED  THERAPY; lecture C8. INFECTIONS AND CANCERS; lecture |
| * 1. **Detailed syllabus *(lecture)***

LECTURE 1. Tumor immunology (cell types involved in tumor recognition and rejection, the "immune synapse”, tumor evasion of immune surveillance) (duration of the meeting 1x45 minutes)LECTURE 2. Cytokines and costimulatory receptors in cancer treatment – current knowledge and perspectives (duration of the meeting 2x45 minutes)LECTURE 3. Checkpoint inhibitors in cancer treatment (CTLA-4, PD-1/PDL-1/2, other potential targets, combination strategies) (duration of the meeting 2x45 minutes)LECTURE 4. Manipulating t cells in anticancer therapy (chimeric antigen receptors, ex vivo expansion of tumor-infiltrating lymphocytes, CD3-directed therapies) (duration of the meeting 2x45 minutes) LECTURE 5. Anticancer vaccines and oncolytic viruses (duration of the meeting 2x45 minutes) LECTURE 6. Therapies directed at other cell types in tumor microenvironment (natural killer cells, macrophages,  IDO) (duration of the meeting 2x45 minutes)LECTURE 7. Immune response criteria and predictors of response to immune-based therapy (duration of the meeting 2x45 minutes)LECTURE 8. Infections and cancers (duration of the meeting 2x45 minutes) |

**4.3 Intended learning outcomes**

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| **Code** | **A student, who passed the course** | **Relation to learning****outcomes** |
| within the scope of **knowledge**, the graduate knows and understands: |
| W01 | the issues concerning the immunology of cancer; | C.W24. |
| W02 | the genetic basis for selection of the donor and recipient and the basics of the immunology of transplantation; | C.W25. |
| W03 | basic mechanisms of tissue and cell damage; | C.W27. |
| within the scope of **ABILITIES**, the graduate knows how to: |
| U01 | uses the antigen - antibody reaction in current modifications and techniques for the diagnosis of infectious diseases, allergies, autoimmune diseases, blood diseases and cancer; | C.U8. |
| U02 | make connection between images of tissue and organ damage and clinical symptoms of the disease, medical history and the results of laboratory determinations; | C.U11. |
| U03 | analyze defensive and adaptation reactions as well as regulation disorders caused by the etiological factor; | C.U12. |
| within the scope of **SOCIAL COMPETENCE**, the graduate is able to: |
| K05 | recognize his/her own limitations and self-evaluate educational deficiencies and needs; | H.S5 |
| K07 | use reliable information sources; | H.S7 |
| K10 | give opinions concerning various aspects of professional activity; | H.S10 |
| K11 | take responsibility for own decisions made during professional activities including own safety and safety of other people; | H.S11 |

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| **4.4.Methods of assessment of the intended learning outcomes** |
| **Teaching** **outcomes*****(code)*** | **Method of assessment (+/-)** |
| **Exam oral/~~written~~\*** | **Test\*** | **Project\*** | **Effort** **in class\*** | **Self-study\*** | **Group work\***  | **Others\*****Observation** |
| ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** |
| *C* | *L* | *...* | *C* | *L* | *...* | *C* | *L* | *...* | *C* | *L* | *...* | *C* | *L* | *...* | *C* | *L* | *...* | *C* | *L* | *...* |
| W01 | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***-*** |  |
| W02 | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***-*** |  |
| W03 | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***-*** |  |
| U01 | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***-*** |  |
| U02 | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***-*** |  |
| U03 | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***+*** |  | ***-*** | ***-*** |  |
| K01-K11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ***+*** |  |

***\*delete as appropriate***

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| * 1. **Criteria of assessment of the intended learning outcomes**
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| **Form of classes** | **Grade** | **Criterion of assessment** |
| **classes (C)\*** | **3** | From 61%-68% Learning programme content on the basic level, replies chaotic, leading questions necessary.  |
| **3,5** | From 69%-76% Learning programme content on the basic level, answers systematized, requires assistance from the teacher. |
| **4** | 77%-84% Learning programme content on the basic level, answers systematized, independent.Solving of problems in typical situations |
| **4,5** | From 85%-92% The scope of presented knowledge exceeds the basic level based on the supplementary literature provided. Solving of problems in new complex situations |
| **5** | From 93%-100% The scope of presented knowledge goes beyond the primary level based on independently gained scientific sources of information |

* [**Thresholds**](https://pl.bab.la/slownik/angielski-polski/thresholds) **are valid from 2018/ 2019 academic year**
1. **BALANCE OF ECTS CREDITS – STUDENT’S WORK INPUT**

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| **Category** | **Student's workload** |
| **Full-time****studies** |
| *NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/* | **15** |
| *Participation in lectures\** | **10** |
| *Participation in classes, seminars, laboratories\** |  |
| *Preparation in the exam/ final test\** |  |
| *Others\** | **51** |
| *INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/* | **10** |
| *Preparation for the lecture\** | **10** |
| *Preparation for the classes, seminars, laboratories\** |  |
| *Preparation for the exam/test\** |  |
| *Gathering materials for the project/Internet query\** |  |
| *Preparation of multimedia presentation* |  |
| *Others\** |  |
| *TOTAL NUMBER OF HOURS* | **25** |
| ECTS credits for the course of study | **1** |

***Accepted for execution*** *(date and signatures of the teachers running the course in the given academic year)*

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1 e-learning (without participation of the lecturer)