**description of the course of study**

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| **Course code** | **0912-7LEK-C3.8-P** |
| **Name of the course in** | Polish | **Patofizjologia** |
| English | **Pathophysiology** |

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. Anna Polewczyk, prof. UJK |
| **1.6. Contact** | Wnoz\_inm@ujk.edu.pl |

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

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| **2.1. Language of instruction** | English |
| **2.2. Prerequisites\*** | Anatomy, Histology, Physiology |

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

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| * 1. **Form of classes**
 | LECTURE 30 (including 10 hours of e-learning), CLASSES 40 (including 6 hours of e-learning) |
| * 1. **Place of classes**
 | Courses in the teaching rooms of UJK |
| * 1. **Form of assessment**
 | LECTURE – E, CLASSES- Zo (credit with grade) |
| * 1. **Teaching methods**
 | Practical classes, conversational lecture, discussion |
| * 1. **Bibliography**
 | **Required reading** | McPhee S.J., Hammer G.D: “Pathophysiology of Disease. An Introduction to Clinical Medicine” Mc-Graw-Hill, 2018  |
|  **Further reading** | Copstead L-E., Banasik J.: Pathophysiology” Elsevier, 6th Edition, 2018Kumar V., Abbas A.K., Fausto N., Aster J.C. – “Robbins and Cotran Pathologic Basis of Disease” . Saunders Elsevier 2020Porth's Pathophysiology: Concepts of Altered Health States, 10th ed. Lippincott & Wilkins 2018 |

1. **Objectives, syllabus CONTENT and intended teaching outcomes**

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

The aim of teaching pathophysiology is to explain to medical students the functional changes of the system in disease, mechanisms of diseases development as well as systemic consequences resulted from the disease. The students should be familiarized and able to use the terminology used in pathophysiology, know the basis of etiopathogenesis of individual systems diseases, knows patomechanism of the consequences of organs and systems dysfunction as well as using the acquired knowledge practically. **Classess**Practical assessment of pathophysiological phenomenon in particular organs and systems with ability to connectin individual patomechanisms accompanying different illnesses |
| * 1. Detailed syllabus *(lecture, classes)*

**Interactive lectures, presentation of the cases****Semester I 15 hours Lectures 1-6 (including 5 hours e-learning)****1. Diseases of the heart and blood vessels**: atherosclerosis, ischaemic heart disease, acute coronary syndromes, arrhythmia 3h 1. Heart defects, hypertension, pulmonary hypertension, cardiomyopathies, heart failure, oedema pulmonum, cardiogenic shock 5 h e-learning
2. Pathophysiology of inflammatory heart diseases 2h
3. **Pathophysiology of diseases of respiratory system** 5h

**Semester II 15 hours Lectures 8-13 (including 5 hours e-learning)**1. **Pathophysiology of the digestive system: gastroesophageal diseases, stomach and duodenal diseases, intestinal diseases, malabsorption**. **Disorders of thermoregulation**. **Pathophysiology of metabolism of carbohydrates, protein and lipids** 3h e-learning
2. **Pathophysiology of renal diseases** 3h
3. **Hormonal disorders** – disorders of basal function of excretory system and hormonal disorders of hypothalamic – pituitary- adrenal axis and thyroid abnormalities 2h
4. **Reproductive pathophysiology** - disorders of gender differentiation and genital development, sexual maturation disorders, psychosexual disorders in women and men, pathogenesis of impotence and sex cooling 2h
5. **Pathophysiology of selected central and peripheral nervous system diseases** 2h e-learning
6. **Pathophysiology of hematopoietic system and immunopathology** 2h
7. **Pathogenesis of the neoplasmatic diseases**- 1h

**Classes****Semester I 20 hours Classes 1-5 (including 3 hours e-learning)**1 Pathophysiology of circulatory system: ischaemic heart disease, acute coronary syndromes, arrhythmia. Pathogenesis of hypertension 6h 2. Pathophysiology of circulatory system: defects of the heart, heart failure, acute cardiac conditions 3h e-learning3. The pathophysiology of respiratory diseases 6h1. The pathophysiology of nervous system diseases 5h

**Semester II 20 hours Classes 6-11 (including 3 hours e-learning)**6. The pathophysiology of the digestive system: gastroesophageal reflux disease, stomach and duodenal disease, intestinal diseases, malabsorption. Disorders of carbohydrate, protein and lipid metabolism 3 h e-learning 7. The pathogenesis of excretory system diseases 4h 8. Water-electrolyte imbalance and the disorders of Acid-Base Balance 4 h 9. Disturbances in the functioning of the endocrine system 4 h10. The pathophysiology of the hematopoietic system with particular emphasis on hemostasis disorders. Immunopathology 5 h |

* 1. **Education outcomes in the discipline**

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| **Code** | **A student, who passed the course** | **Relation to teaching****outcomes** |
| within the scope of **knowledge**, the graduate knows and understands**:** |
| W1 | the consequences of inadequate nutrition, including long-term starvation, taking too large meals and the use of unbalanced diet as well as digestive disorders and malabsorption; | C.W50. |
| W2. | the consequences of vitamins or minerals deficiency and their excess in the body; | C.W48. |
| W3. | the mechanism of hormones’ functioning; | C.W51. |
| W4. | the mechanisms of aging; | B.W23. |
| W5. | the relationship between the factors that disrupt the equilibrium of biological processes and physiological and pathophysiological changes; | B.W25. |
| within the scope of **ABILITIES**, the graduate knows how to: |
| U01 | describe changes in the functioning of the organism in case of disruption of homeostasis, in particular determines its integrated response to exercise, exposure to high and low temperature, loss of blood or water, sudden vertical position, transition from sleep to wakefulness; | C.U20. |
| U02 | perform simple function tests evaluating the human body as a system stable regulation (stress tests); interprets the figures on the basic physiological variables; | B.U7. |
|  | within the scope of **SOCIAL COMPETENCE**, the graduate is able to: |  |
| K01 | recognize his/her own limitations and self-evaluate educational deficiencies and needs; | H.S5 |
| K02 | use reliable information sources; | H.S7 |
| K03 | conclude on the basis of own surveys and observations; | H.S8 |
| K04 | introduce rules of social conduct and teamwork to the group of specialists, including specialists form other medical professions also in the multicultural and multinational environment; | H.S9 |
| K05 | give opinions concerning various aspects of professional activity; | H.S10 |
| K06 | 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 teaching outcomes** |
| **Teaching** **outcomes*****(code)*** | **Method of assessment (+/-)** |
| **Written exam-test\*** | **Test\*** | **Project\*** | **Effort** **in class-Discussion\*** | **Practical test\*** | **Group work\***  | **Attendance\*** | **Observation** |
| ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** | ***Form of classes*** |
| *L* | *C* | *...* | *L* | *C* | *...* | *L* | *C* | *...* | *L* | *C* | *...* | *L* | *C* | *...* | *L* | *C* | *...* | *L* | *C* | *...* | *L/C* |
| W01 | + | + |  |  |  |  |  |  |  |  | + |  |  |  |  |  |  |  | + | + |  |  |
| W02 | + | + |  |  |  |  |  |  |  |  | + |  |  |  |  |  |  |  | + | + |  |  |
| W03 | + | + |  |  |  |  |  |  |  |  | + |  |  |  |  |  |  |  | + | + |  |  |
| W04 | + | + |  |  |  |  |  |  |  |  | + |  |  |  |  |  |  |  | + | + |  |  |
| W05 | + | + |  |  |  |  |  |  |  |  | + |  |  |  |  |  |  |  | + | + |  |  |
| U01 | + |  |  |  |  |  |  |  |  |  |  |  |  | + |  |  |  |  | + | + |  |  |
| U02 | + |  |  |  |  |  |  |  |  |  |  |  |  | + |  |  |  |  | + | + |  |  |
| U03 | + |  |  |  |  |  |  |  |  |  |  |  |  | + |  |  |  |  | + | + |  |  |
| K01-K06 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + |

***\*delete as appropriate***

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| * 1. **Criteria of assessment of the intended teaching outcomes**
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| **Form of classes** | **Grade** | **Criterion of assessment** |
|  **lecture (L)** | **3** | 61%-68% Learning programme content on the basic level, replies chaotic, leading questions necessary.  |
| **3,5** | 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** | 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** | 93%-100% The scope of presented knowledge exceeds the basic level based on independently acquired scientific sources of information.  |
| **classes (C)\*** | **3** | 61%-68%Learning programme content on the basic level, replies chaotic, leading questions necessary |
| **3,5** | 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** | 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** | 93%-100%The scope of presented knowledge exceeds the basic level based on independently acquired scientific sources of information.  |

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/* | **70** |
| *Participation in lectures\** | **20** |
| *Participation in classes, seminars, laboratories\** | **34** |
| *Preparation in the exam/ final test\** |  |
| *Others\** | **16**1 |
| *INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/* | **105** |
| *Preparation for the lecture\** | **45** |
| *Preparation for the classes, seminars, laboratories\** | **60** |
| *Preparation for the exam/test\** |  |
| *Gathering materials for the project/Internet query\** |  |
| *Preparation of multimedia presentation* |  |
| *Others\** |  |
| *TOTAL NUMBER OF HOURS* | **175** |
| ECTS credits for the course of study | **7** |

***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)