**description of the course of study**

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| **Course code** | 0912-7LEK-F-8-GMO |
| **Name of the course in** | Polish | **Żywność modyfikowana genetycznie** |
| English | **Genetically-modified foods [GM foods]** |

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. Wioletta Adamus-Białek, prof. UJK |
| **1.6. Contact** | wioletta.adamus-bialek@ujk.edu.pl |

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

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| **2.1. Language of instruction**  | English |
| **2.2. Prerequisites\*** | none |

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

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| * 1. **Form of classes**
 | Lecture- 15h (including 5 hours of e-learning) |
| * 1. **Place of classes**
 | Traditional classes in the didactic room of JKU |
| * 1. **Form of assessment**
 | Credit with grade |
| * 1. **Teaching methods**
 | Informative lecture |
| * 1. **Bibliography**
 | **Required reading** | Genetic Modification and Food Quality, Author(s): Robert Blair, Joe M. Regenstein |
|  **Further reading** |  Genetically Modified Organisms in Developing Countries ; Edited by [Ademola A. Adenle](https://www.cambridge.org/core/search?filters%5BauthorTerms%5D=Ademola%20A.%20Adenle&eventCode=SE-AU), Colorado State University , [E. Jane Morris](https://www.cambridge.org/core/search?filters%5BauthorTerms%5D=E.%20Jane%20Morris&eventCode=SE-AU), University of Leeds , [Denis J. Murphy](https://www.cambridge.org/core/search?filters%5BauthorTerms%5D=Denis%20J.%20Murphy&eventCode=SE-AU), Camvbridge July 2017Scientific articles from PubMed NCBI |

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

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

C1 – acquiring the knowledge in the field of techniques for obtaining GMO and cultivationC2 – acquiring the knowledge of types of genetic modifications, C3 – acquiring the knowledge in the field of techniques for detection of GMOC4 – understanding the benefits and potential risks associated with genetically modified foodC5 – acquiring the knowledge about genetically modified food in relation to conventional and bio-food, running genetically modified crops (environmental, health and ethical context) |
| * 1. **Detailed syllabus *(lecture)***

A brief history and contemporaneity of genetics. Model organisms in genetic research. Advantages of transgenic organisms. Genetic modifications as intellectual and legal property, its protection. Genomics; learning the future. Genetically modified organisms (GMOs). The impact of GM organisms on the natural environment. Genetically modified organisms in environmental protection. Genetically modified organisms – threats to the environment. Benefits and threats of GMOs. Genetically modified food of plant and animal origin. Potential hazards resulting from the consumption of genetically modified food by animals and the final consumer – human. Practical use of molecular techniques in identifying genetically modified food. Law on GMOs. |

**4.3 Intended learning outcomes**

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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: |
| W01 | benefits and risks arising from the presence in the ecosystem of genetically modified organisms (GMOs); | C.W10. |
| within the scope of **ABILITIES**, the graduate knows how to: |
| U01 | apply dietary treatment with the consideration of enteral and parenteral feeding; | E.U25. |

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|  | within the scope of **SOCIAL COMPETENCE**, the graduate is able to: |  |
| K01 | establish and maintain deep and respectful contact with the patient and show understanding towards ideological and cultural differences;  | H.S1 |
| K02 | do what is right for the patient; | H.S2 |
| K03 | respect medical confidentiality and patient’s rights; | H.S3 |
| K04 | take actions concerning the patient on the basis of ethical principles, being aware of social conditions and restrictions resulting from illness; | H.S4 |
| K05 | recognize his/her own limitations and self-evaluate educational deficiencies and needs; | H.S5 |
| K06 | promote healthy lifestyle; | H.S6 |
| K07 | use reliable information sources; | H.S7 |
| K08 | conclude on the basis of own surveys and observations; | H.S8 |
| K09 | 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 |
| 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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| * 1. **Methods of assessment of the intended learning outcomes**
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| **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*** |
| *L* | *C* | *…* | *L* | *C* | *…* | *L* | *C* | *…* | *L* | *C* | *…* | *L* | *C* | *…* | *L* | *C* | *…* | *L* | *C* | *…* |
| W01 |  |  |  | ***+*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| U01 |  |  |  | ***+*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 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** |
|  **lecture (L)** | **3** | Test –61-68% Mastering program content at the elementary level |
| **3,5** | Test – 69-76% Mastering program content at the elementary level, systematized answers |
| **4** | Test – 77-84%. Mastering program content at the elementary level, systematized answers. Problem solving in typical situations |
| **4,5** | Test – 85-92% The scope of the presented knowledge goes beyond the basic level based on the supplementary reference literature. Solving problems in new and complex situations. |
| **5** | Test – 93-100% The scope of the presented knowledge goes beyond the basic level based on independently acquired 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\** | **5** |
| *Preparation for the classes, seminars, laboratories\** |  |
| *Preparation for the exam/test\** | **5** |
| *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)