# COURSE DESCRIPTION

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| Course title | in Polish | Analiza ekspresji genów |
| | in English | Gene expression analysis |

## 1. POSITION OF THE COURSE IN THE EDUCATION SYSTEM

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| 1.1. Section | Section of Exact and Natural Sciences |
| 1.2. Discipline | Biological sciences |
| 1.3. Mode of study | Full-time |
| 1.4. Level of education | Doctoral School |
| 1.5. Person preparing the course description | Dr hab. n. med. Artur Kowalik, Professor at UJK |
| 1.6. Contact | |

## 2. GENERAL COURSE INFORMATION

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| 2.1. Course type | Discipline-specific course |
| 2.2. Language of instruction | English |

## 3. DETAILED COURSE INFORMATION

| | | |
|---|---|---|
| Course format | | Lecture |
| Number of hours | | 15 |
| Place of instruction | | UJK teaching room / remote teaching via Microsoft Teams |
| Form of assessment | | Graded pass |
| Teaching methods | | Lecture<br>Text-based work<br>Presentations |
| Reading list | Core | Tom Strachan, Judith Goodship, Patrick Chinnery, Genetics and Genomics in Medicine, 1st Edition, 2014<br>Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, Peter Walter, Molecular Biology of the Cell, 6th Edition, 2014 |
| | Supplementary | Robert A. Weinberg, The Biology of Cancer, 2nd Edition, 2013<br>PubMed |

## 4. COURSE OBJECTIVES, CONTENT AND LEARNING OUTCOMES

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| Course objectives (lecture)<br>C01 To become familiar with knowledge concerning gene expression.<br>C02 To become familiar with research methodology concerning gene expression. |
| Course content (lecture)<br>RNA structure. Types of RNA molecules and regulation of gene expression. Translation. Methods of analysing gene expression. |

## 5. COURSE LEARNING OUTCOMES

| Course learning outcome | Upon completion of the course, the doctoral student: | Corresponding Doctoral School learning outcome |
|---|---|---|
| KNOWLEDGE | | |
| W01 | Has advanced knowledge of the regulation of gene expression. | SD_W01 |
| W02 | Knows and understands major developments in the study of gene expression. | SD_W02 |
| W03 | Understands current scientific challenges related to the regulation of gene expression. | SD_W07 |
| SKILLS | | |
| U01 | Can select a research method for studying gene expression appropriate to a selected research problem. | SD_U01 |
| U02 | Can use English-language scientific sources relevant to gene expression research. | SD_U07 |
| U03 | Can apply knowledge from different fields to identify and solve complex problems in gene expression research. | SD_U03 |
| SOCIAL COMPETENCES | | |

## 6. METHODS OF VERIFYING THE ACHIEVEMENT OF COURSE LEARNING OUTCOMES

| Course learning outcomes | Assessment method (+/-) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exam | | | Test | | | Project | | | Participation | | | Own work | | | Group work | | | Other | | |
| | Format | | | Format | | | Format | | | Format | | | Format | | | Format | | | Format | | |
| | L | C | S | L | C | S | L | C | S | L | C | S | L | C | S | L | C | S | L | C | S |
| W01 | | | | + | | | | | | | | | | | | | | | | | |
| W02 | | | | + | | | | | | | | | | | | | | | | | |
| W03 | | | | + | | | | | | | | | | | | | | | | | |
| U01 | | | | + | | | | | | | | | | | | | | | | | |
| U02 | | | | + | | | | | | | | | | | | | | | | | |
| U03 | | | | + | | | | | | | | | | | | | | | | | |

## 7. ASSESSMENT CRITERIA FOR LEARNING OUTCOMES

| Course format | Grade | Assessment criterion |
|---|---|---|
| Lecture (L) | 3.0 | Achievement of 51–60% on the graded test |
| | 3.5 | Achievement of 61–70% on the graded test |
| | 4.0 | Achievement of 71–80% on the graded test |
| | 4.5 | Achievement of 81–90% on the graded test |
| | 5.0 | Achievement of 91–100% on the graded test |

Accepted for implementation

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