SYLLABUS – A COURSE DESCRIPTION

I. General informaion

1. Course name: **Molecular basis of cytoprotection_2020**
2. Course code: **01-BTA-CYTOMOL**
3. Course type (compulsory or optional): **optional**
4. Study programme name: **Biotechnology**
5. Cycle of studies (1st or 2nd cycle of studies or full master's programme): **2nd cycle of studies**
6. Educational profile (general academic profile or practical profile): **general academic profile**
7. Year of studies (if relevant): **II**
8. Type of classes and number of contact hours (e.g. lectures: 15 hours; practical classes: 30 hours):

   conversatorium: 15 hours
9. Number of ECTS credits: **2**
10. Name, surname, academic degree/title of the course lecturer/other teaching staff:

    prof. dr hab. Hanna Kmita, kmita@amu.edu.pl

    dr hab. Małgorzata Wojtkowska, woytek@amu.edu.pl
11. Language of classes: **English**
12. Online learning – yes (partly – online / fully – online) / no: **If required available by MS Teams**

II. Detailed information

1. Course aim (aims)

   Summary and extension of the knowledge concerning extracellular and intracellular processes that contribute to cell death. The processes appear to constitute a starting point in constructing efficient therapeutic startegies. This implicates modulation of the processes to trigger cytoprotection crucial for the treatment of e.g. neurodegenerative diseases as well as cytotoxic effect that can be applied in anti-cancer therapies.
2. Pre-requisites in terms of knowledge, skills and social competences (if relevant)

   The knowledge acquired during the course of the study and concerning cell structure and intracellular processes including regulation of gene expression and other signaling pathways triggered by intra- and extracellular signals as well as basic information about biological membrane organization and mitochondrial functions. The seminar participant should have the ability to understand scientific texts written in English, to prepare short presentations for discussion of the issues and to participate in the discussion.
3. Course learning outcomes (EU) in terms of knowledge, skills and social competences and their reference to study programme learning outcomes (EK)

Course learning outcome symbol (EU)	On successful completion of this course, a student will be able to:	Reference to study programme learning outcomes (EK)
EU_01	define cell death mechanisms at the molecular level	BT_W03, BT_W04, BT_U03, BT_U05, BT_K02, BT_W09
EU_02	delineate signalling pathways triggering cell death as well as protecting cells against the mechanisms of cell death	BT_W03, BT_W04, BT_U03, BT_U05, BT_K02, BT_W09
EU_03	propose possible sites of signaling pathway modulation to construct a preventive or therapeutic strategy based on cytoprotection or cytotoxic effect	BT_W03, BT_W04, BT_W09, BT_U02, BT_U05, BT_K01, BT_K02
EU_04	critically analyze scientific papers written in English, prepare and present scientific presentation and participate in discussion	BT_W04, BT_W09, BT_U03, BT_U04, BT_U05, BT_K04, BT_K02

4. Learning content with reference to course learning outcomes (EU)

Course learning content	Course learning outcome symbol (EU)
Classification of cell death pathways	EU_01, EU_02, EU_03, EU_04
Extracellular elements of the decision "life or death"	EU_02, EU_03, EU_04
Intracellular elements of the decision "life or death"	EU_02, EU_03, EU_04
How to protect a cell: implications for degenerative diseases	EU_01, EU_02, EU_03, EU_04
How to kill a cell: implications for cancer	EU_01, EU_02, EU_03, EU_04

5. Reading list

Wydawnictwa książkowe

1. : papers provided by persons leading the seminar or/and by students, , , ,

III. Additional information

1. Teaching and learning methods and activities to enable students to achieve the intended course learning outcomes (please indicate the appropriate methods and activities with a tick or/and suggest different methods)

Teaching and learning methods and activities	
Lecture with a multimedia presentation	
Interactive lecture	X
Problem – based lecture	
Discussions	X
Text-based work	X
Case study work	
Problem-based learning	
Educational simulation/game	
Task – solving learning (eg. calculation, artistic, practical tasks)	X
Experiential work	
Laboratory work	
Scientific inquiry method	
Workshop method	
Project work	
Demonstration and observation	
Sound and/or video demonstration	
Creative methods (eg. brainstorming, SWOT analysis, decision tree method, snowball technique, concept maps)	X
Group work	X

2. Assessment methods to test if learning outcomes have been achieved (please indicate with a tick the appropriate methods for each LO or/and suggest different methods)

Assessment methods	Course learning outcome symbol			
	EU_1	EU_2	EU_3	EU_4
Written exam				
Oral exam				
Open book exam				
Written test				
Oral test				
Multiple choice test	X	X	X	

Project				
Essay			X	X
Report				
Individual presentation	X	X	X	X
Practical exam (performance observation)				
Portfolio				
Discussion activity	X	X	X	X

3. Student workload and ECTS credits

Activity types	Mean number of hours spent on each activity type
Contact hours with the teacher as specified in the study programme	15
Preparation for classes	5
Reading for classes	10
Essay / report / presentation / demonstration preparation, etc.	10
Project preparation	
Term paper preparation	
Test preparation	10
Total hours	50
Total ECTS credits for the course	2

4. Assessment criteria according to AMU in Poznan grade system

Very good (bdb; 5,0): Clear attainment of the course outcomes, showing complete and comprehensive understanding of the course content, with development of relevant skills and intellectual initiative to an extremely high level.
Good plus (+db; 4,5): Substantial attainment of the course outcomes, showing a high level of understanding of the course content, with development of relevant skills and intellectual initiative to a high level.
Good (db; 4,0): Sound attainment of the course outcomes, showing good understanding of the course content, with development of relevant skills and intellectual initiative to good level.
Satisfactory plus (+dst; 3,5): Some attainment of the course outcomes, showing some understanding of the course content, with development of relevant skills and intellectual initiative to rather good level.
Satisfactory (dst; 3,0): Weak attainment of the course outcomes, showing acceptable understanding of the course content, with development of relevant skills and intellectual initiative to acceptable level.
Unsatisfactory (ndst; 2,0): Very weak attainment of the course outcomes, showing not passable understanding of the course content, with development of relevant skills and intellectual initiative to not acceptable level.