

SYLLABUS – A COURSE DESCRIPTION

I. General information

1. Course name: **Animal Models of Human Diseases**
2. Course code: **01-BTA-MODDIS**
3. Course type (compulsory or optional): **compulsory**
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):
8. Type of classes and number of contact hours (e.g. lectures: 15 hours; practical classes: 30 hours):
lectures: 15 hours
practical classes: 10 hours
conversatorium: 10 hours
9. Number of ECTS credits: **4**
10. Name, surname, academic degree/title of the course lecturer/other teaching staff:
prof. dr hab. Johannes Bluijssen, h.bluyss@amu.edu.pl
prof. dr hab. Joanna Wesoly, j.wesoly@amu.edu.pl
Visiting professors:
prof. Rob Willemsen from Erasmus University Medical Center, Rotterdam, The Netherlands - a specialist in mouse disease models related to CGG repeat expansion
prof. Ruben Artero from the Universidad de Valencia INCLIVA Biomedical Research Institute, Valencia, Spain - a specialist in insect models (mainly Drosophila) of neuromuscular and neurodegenerative diseases
11. Language of classes: **english**
12. Online learning – yes (partly – online / fully – online) / no: **Traditional classroom methods will be combined with computer-mediated activities.**

II. Detailed information

1. Course aim (aims)
 To provide insight in the current state of the art technologies, concepts and biotechnological applications of animal models in modern medicine.
 Topics include:
 C1. Genetic strategies of generating Animal models: Mouse
 C2. Genetic strategies of generating Animal models: Other model organisms (Drosophila, C.Elegans, Zebra Fish, Yeast..)
 C3. Animal Models of Cancer
 C4. Animal Models of Cardiovascular diseases
 C5. Animal Models of Viral infection and other pathogenic diseases
 C6. Drug screening and development using animal disease models
2. Pre-requisites in terms of knowledge, skills and social competences (if relevant)
 To attain a working knowledge of current state of the art technologies, concepts and biotechnological applications of animal models in modern medicine. Wherever possible e-learning will be incorporated. Furthermore, students will extend and solidify their understanding of the presented principles through critical readings from the primary research literature, as well as student-prepared presentations of individual topics during journal clubs. Finally, students will be introduced to basic techniques and practical knowledge of working in an animal facility and handling mice.
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	Creatively utilize current state of the art technologies, concepts and biotechnological applications of animal models in modern medicine.	BT_W02, BT_W09, BT_K02, BT_W01, BT_W03, BT_W06, BT_U01

EU_02	Reading, understanding and presenting principles of the primary research literature applied to animal models in modern medicine.	BT_U03, BT_U04, BT_U07, BT_U06
EU_03	Practical introduction to basic techniques of working in an animal facility and handling mice.	BT_U01, BT_U02, BT_U03, BT_U06, BT_U07, BT_K01

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

Course learning content	Course learning outcome symbol (EU)
Genetic strategies of generating Animal models: Mouse	EU_01, EU_02, EU_03
Genetic strategies of generating Animal models: Other model organisms (Drosophila, C.Elegans, Zebra Fish, Yeast..)	EU_01, EU_02
Animal Models of Cancer	EU_01, EU_02
Animal Models of Cardiovascular diseases	EU_01, EU_02
Animal Models of Viral infection and other pathogenic diseases	EU_01, EU_02
Drug screening and development using animal disease models	EU_01, EU_02
Literature knowledge	EU_01, EU_02, EU_03
Practicals	EU_01, EU_02, EU_03

5. Reading list

Information about the sources with the materials, handouts, instructions, and syllabi for the courses

<http://dhmg.amu.edu.pl>

Section: Teaching/Animal Models

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	X
Interactive lecture	
Problem – based lecture	
Discussions	X
Text-based work	
Case study work	
Problem-based learning	
Educational simulation/game	
Task – solving learning (eg. calculation, artistic, practical tasks)	
Experiential work	
Laboratory work	X
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)	
Group work	

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
Written exam			
Oral exam			
Open book exam			
Written test	X	X	X
Oral test			
Multiple choice test			
Project			
Essay			
Report			
Individual presentation			
Practical exam (performance observation)			X
Portfolio			
Discussion activity	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	30
Preparation for classes	15
Reading for classes	15
Essay / report / presentation / demonstration preparation, etc.	5
Project preparation	
Term paper preparation	
Exam preparation	30
Total hours	95
Total ECTS credits for the course	4

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.