

**AGH**AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY

Module name: Drug design

Academic year: 2019/2020 Code: CIMT-2-230-s ECTS credits: 2

Faculty of: Materials Science and Ceramics

Field of study: Materials Science Specialty: —

Study level: Second-cycle studies Form and type of study: Full-time studies

Lecture language: English Profile of education: Academic (A) Semester: 2

Course homepage: —

Responsible teacher: dr hab. Suder Piotr (psuder@agh.edu.pl)

Description of learning outcomes for module

MLO code	Student after module completion has the knowledge/ knows how to/is able to	Connections with FLO	Method of learning outcomes verification (form of completion)
Social competence: is able to			
M_K001	Students will be familiarized with the modern technologies in drug design, manufacturing and quality control. There also be some interactions between biologically active substances and living organisms explained.	IMT2A_W01, IMT2A_K03, IMT2A_U01	Test
Knowledge: he knows and understands			
M_W001	Students would be able to recognize basic drug groups, they could apply analytical strategy to a selected groups of pharmaceuticals and receive an overall knowledge about interaction of the selected drugs with the human organism.	IMT2A_W01, IMT2A_K03, IMT2A_U05	
M_W002	Students will be aware of interactions between human organ and selected pharmaceuticals.	IMT2A_U05	
M_W003	Students will be informed about side effects of toxins and pharmaceuticals in the nearest environment.	IMT2A_W01	Activity during classes

Number of hours for each form of classes

Suma	Form of classes										
	Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Prace kontrolne i przejściowe	Lektorat
30	30	0	0	0	0	0	0	0	0	0	0

FLO matrix in relation to forms of classes

MLO code	Student after module completion has the knowledge/ knows how to/is able to	Form of classes										
		Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Prace kontrolne i przejściowe	Lektorat
Social competence: is able to												
M_K001	Students will be familiarized with the modern technologies in drug design, manufacturing and quality control. There also be some interactions between biologically active substances and living organisms explained.	-	-	-	-	-	-	-	-	-	-	-
Knowledge: he knows and understands												
M_W001	Students would be able to recognize basic drug groups, they could apply analytical strategy to a selected groups of pharmaceuticals and receive an overall knowledge about interaction of the selected drugs with the human organism.	+	-	-	-	-	-	-	-	-	-	-
M_W002	Students will be aware of interactions between human organism and selected pharmaceuticals.	+	-	-	-	-	-	-	-	-	-	-
M_W003	Students will be informed about side effects of toxins and pharmaceuticals in the nearest environment.	-	-	-	-	-	-	-	-	-	-	-

Student workload (ECTS credits balance)

Student activity form	Student workload
Udział w zajęciach dydaktycznych/praktyka	30 h
Preparation for classes	10 h
Realization of independently performed tasks	5 h
Examination or Final test	2 h
Contact hours	5 h
Summary student workload	52 h
Module ECTS credits	2 ECTS

Additional information

Module content

Lectures

Principles in design of the novel drugs, perspectives and development of the novel therapies and quality controlling in the drug manufacturing process. Historical approaches in the searching of the drugs from early techniques of syphilis treatment to novel hair growth improvement agents and viagra. There will be discussed topics related to optimization of the typical drugs design, including psychoactive substances, precursors derived from the natural sources, like conotoxins, black mamba venom and related.

Basic topics presented during lectures:

- from syphilis to hair growth stimulation
- searching for panaceum
- protein and peptide drugs
- accident decides: poor drug works excellent in another illness
- psychoactive drugs: law problems with modern stimulants
- fake drugs – international problem
- abusers among sportsmen – what they are using?
- drugs monitoring and manufacturing supervision
- analytical approaches towards bioactive substances monitoring

Teaching methods and techniques:

Lectures: Treści prezentowane na wykładzie są przekazywane w formie prezentacji multimedialnej w połączeniu z klasycznym wykładem tablicowym wzbogaconymi o pokazy odnoszące się do prezentowanych zagadnień.

Warunki i sposób zaliczenia poszczególnych form zajęć, w tym zasady zaliczeń poprawkowych, a także warunki dopuszczenia do egzaminu:

Nie określono

Zasady udziału w poszczególnych zajęciach, ze wskazaniem, czy obecność studenta na zajęciach jest obowiązkowa:

Lectures:

- Attendance is mandatory: No
- Participation rules in classes: Studenci uczestniczą w zajęciach poznając kolejne treści nauczania zgodnie z sylabusem przedmiotu. Studenci winni na bieżąco zadawać pytania i wyjaśniać wątpliwości. Rejestracja audiowizualna wykładu wymaga zgody prowadzącego.

Method of calculating the final grade

After the lectures a test is planned. Final note will be equal to the note received on the test.

Sposób i tryb wyrównywania zaległości powstałych wskutek nieobecności studenta na zajęciach:

Nie określono

Prerequisites and additional requirements

there is no additional requirements

Recommended literature and teaching resources

Recommended literature and teaching resources not specified

Scientific publications of module course instructors related to the topic of the module

Additional scientific publications not specified

Additional information

None