Modulbezeichnung:	**Drug discovery (MSM-life)** (Drug discovery)	**30 ECTS**
Modulverantwortliche/r:	Peter Gmeiner	
Lehrende:	Nicolai Burzlaff, Jutta Eichler, Ivana Ivanovic-Burmazovic, u.a., Andreas Burkovski, Christian Koch, Markus Heinrich, Peter Gmeiner	

Startsemester: WS 2019/2020	Dauer: 2 Semester	Turnus: jährlich (WS)
Präsenzzeit: 450 Std.	Eigenstudium: 450 Std.	Sprache: Englisch

Lehrveranstaltungen:

Mandatory courses:

Seminars:

Drug Discovery-SEMINAR (7SEM)

Drug Discovery-Laboratory course (23LAB): 10 week block lab project in one of the participating research groups (Profs. Burkovski, Burzlaff, Eichler, Gmeiner, Heinrich, Ivanovic-Burmazovic, Koch, Lanig, Muller, Nitschke, Stadler, Winkler, Zahn)

with

Seminar Research projects (1S): oral presentation (20 min, plus discussion)

Seminar Journal club (group seminar in one of the research groups)(2S)

Please note: attendance in lab course is compulsory!

Drug Discovery Praktikum (WS 2019/2020, Praktikum, 23 SWS, Peter Gmeiner et al.)

Drug Discovery Seminar (WS 2019/2020, Seminar, 7 SWS, Andreas Burkovski et al.)

Drug Discovery Praktikum (SS 2020, Praktikum, 23 SWS, Peter Gmeiner et al.)

Drug Discovery Seminar (SS 2020, Seminar, 7 SWS, Andreas Burkovski et al.)

Inhalt:

Drug Discovery-SEMINAR

Genomics, transcriptomics, proteomics; in-vitro assay systems, assay technology; target screening and drug production in plants, drug screening and production in yeast; experimental structural biology; chemoinformatics; molecular modeling: molecular dynamics simulation, force-fields, modeling of proteins, proteinligand docking; drug synthesis and combinatorial chemistry; redox-active metal complexes, metalloenzyme inhibitors; stereochemistry in drug design; organic reactions in medicinal chemistry; drug metabolism; peptidomimetics;

LAB Course

Project course: Lab projects focusing on the modern research issues in one of the participating research groups.

Seminar research projects: students reports on lab projects. Discussions on recent publications in the field of drug discovery (within the respective research units).

Lernziele und Kompetenzen:

The students are able

- to understand the basic and advanced principles of medicinal chemical, molecular biological and Computer chemistry based applications in the field of modern drug design research
- to utilize modern experimental techniques to prepare and characterize various samples with in the lab project
- to apply modern simulation techniques for the modeling of proteins
- to interpret and to critically summarize experimental results in written form (lab report), and to present and discuss these results within the research group or in front of a student audience
- to participate in planning, developing and executing of experimental routes for the synthesis of drugs
- to judge and to discuss in oral form their research results in the field of drug discovery in comparison to recent publications.

Literatur:

G. Klebe, Drug Design: Methodology, Concepts, and Mode-of-Action, Springer 2013

Studien-/Prüfungsleistungen:

Drug Discovery (Prüfungsnummer: 30702)
(englische Bezeichnung: Drug Discovery)

Prüfungsleistung, schriftlich oder mündlich
Anteil an der Berechnung der Modulnote: 50%
weitere Erläuterungen:
Assessment and examinations: Oral examination or alternative examination according to FAU Corona statutes (PL), LEC (PL), LAB (PL)*;
*Lab course protocol (without explicit marks) + oral presentation of research project (20 min + discussion);
Calculation of the grade for the module: O45 (PL) 66 % + LEC (PL) 17 % + LAB (PL) 17 %
Prüfungssprache: Englisch

Erstablegung: SS 2020, 1. Wdh.: WS 2020/2021
1. Prüfer: Peter Gmeiner

Organisatorisches:
Manuscripts are available on **StudON**

Bemerkungen:
Courses of study for which the module is acceptable: M.Sc. Molecular **Lifescience**.
Start of studies is strongly recommended in winter term!