

Detailed syllabus for the course:
Molecular biology of tumors and anticancer drugs

Academic year : 2026/2027

Study: Graduate University Study - Drug Research and Development
Graduate University Study - Medicinal Chemistry

Course code : IRL 104

ECTS credits : 6

Language of the course: English

Course load : 60 hours (40P +20S)

Contact information for teaching:

Christian Reynolds, PhD

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Consultation time : by appointment

Contractors and teaching loads

Christian Reynolds (40P, 20S)

Obligatory Reading:

1. Thurston, D. E., & Pysz, I. (2021). Chemistry and pharmacology of anticancer drugs. CRC press.

Course description (summary and course objectives):

The main goal of this course is to provide insight into the mechanisms anticancer drugs based on biological targets of their action. To this end, the principles of medicinal chemistry and their application in the development anticancer drugs will be presented.

Learning outcomes :

Analyze the main targets of anticancer drugs.

Analyze anticancer drugs.

Detailed course content (topics/titles of lectures, seminars and exercises):

Lectures :

- P1 Course Overview
- P2 Introduction to Cancer
- P3 The Evolution of Anticancer Therapies
- P4 Antimetabolites (3hr)
- P5 Antitubulin Agents (3hr)
- P6 Nucleic Acids as Therapeutic Targets and Agents
- P7 Small-Molecule Targeted Therapies
- P8 Antibody-Based Therapies
- P9 Endocrine Therapies
- P10 Immunomodulatory Therapies
- P11 Alternative Tumor-Targeting Strategies
- P12 The Precision Medicine Approach in Oncology
- P13 Chemopreventive Agents

Seminars:

- S1 Student presentations on selected Antimetabolites
- S2 Student presentations on selected Antitubulin Agents
- S3 Student presentations on selected Nucleic Acids Therapeutics
- S4 Student presentations on selected Small-Molecule Therapeutics
- S5 Student presentations on selected Antibody-Based Therapeutics
- S6 Student presentations on selected Endocrine Therapeutics
- S7 Student presentations on selected Immunomodulatory Therapeutics
- S8 Student presentations on selected Alternative Tumor-Targeting Therapeutics
- S9 Student presentations on selected Precision Medicine Therapeutics
- S10 Student presentations on selected Chemopreventive Therapeutics

Obligations, method of monitoring and evaluating students:

Classes take place in shifts from February 8, 2026 –to March 5, 2027 in the form of lectures and seminars. Students are expected to attend all classes and actively participate. During lectures and seminars, continuous assessment of the knowledge of the classes will be carried out.

50 points through continuous assessment. Students will collect up to 40 points through class attendance and regular quizzes, and 10 points through seminar presentations. The final exam is scored with a maximum of 50 points.

Exam deadlines:

The 1st exam period will be held on March 05, 2027 at 12:00 in room O-269.

The 2nd exam period will be held after two weeks in agreement with the students.

The 3rd term exams will be held in June as agreed with the students.

The 4th exam period will be held in September as agreed with the students.

Forming an assessment:

Students can earn a maximum of 50% of grade points during continuous teaching, and 50% on the final exam. Students who have achieved the following during the continuous teaching period:

- from 0 to 24.9% of grade points cannot take the final exam
- more than 25% of grade points can take the final exam.

The following final grades are awarded based on the total number of grade points achieved:

Percentage of acquired knowledge and skills	ECTS grade	Numerical rating
90% to 100%	A	Excellent (5)
75% to 89.9%	B	Very good (4)
60% to 74.9%	C	Good (3)
50% to 59.9%	D	Sufficient (2)
0% to 49.9%	F	Insufficient (1)

The final grade is the number of points achieved on the final exam, and the passing grades are excellent (5), very good (4), good (3) and sufficient (2).

Class schedule:

	Date	Group	Time	Place	Teaching format	Number of hours	Instructor
MONDAY	08.02.2027.	all	09:00-10:30	O-269	P1	2	Christian Reynolds
TUESDAY	09.02.2027.	all	09:00-12:00	O-269	P2	4	Christian Reynolds
WEDNESDAY	10.02.2027.	all	09:00-12:00	O-269	P3	4	Christian Reynolds
			15:00-16:30	Online	S1	2	Christian Reynolds
THURSDAY	06.02.2027.	all	9:00-12:00	O-269	P4	3	Christian Reynolds
TUESDAY	16.02.2027.	all	09:00-12:00	O-269	P5	3	Christian Reynolds
			15:00-16:30	ONLINE	S2	2	Christian Reynolds
WEDNESDAY	17.02.2027.	all	09:00-12:00	O-269	P6	3	Christian Reynolds
THURSDAY	18.02.2027.	all	09:00-12:00	O-269	P7	3	Christian Reynolds

			13:00-16:00	ONLINE	S3	4	Christian Reynolds
FRIDAY	19.02.2027.	all	09:00-12:00	O-269	P8	3	Christian Reynolds
TUESDAY	23.02.2027.	all	09:00-12:00	O-269	P9	3	Christian Reynolds
WEDNESDAY	24.02.2027.	all	09:00-12:00	O-269	P10	3	Christian Reynolds
THURSDAY	25.02.2027.	all	09:00-12:00	O-269	P11	3	Christian Reynolds
FRIDAY	26.02.2027.	all	09:00-12:00	ONLINE	S5-6	4	Christian Reynolds
			14:00-15:30	ONLINE	S7	2	Christian Reynolds
TUESDAY	02.03.2027.	all	12:00-15:00	O-268	P12	3	Christian Reynolds
			15:00-16:30	ONLINE	S8	2	Christian Reynolds
WEDNESDAY	03.03.2027.	all	09:00-12:00	O-269	P13	3	Christian Reynolds
			16:00-17:30	ONLINE	S9	2	Christian Reynolds
THURSDAY	04.03.2027.	all	09:00-10:30	ONLINE	S10	2	Christian Reynolds
FRIDAY	05.03.2027.	all	12:00-13:00	O-269	ISPIT	-	Christian Reynolds

Additional information: All students are asked to respond to the evaluation of the quality of teaching work of teachers and associates so that based on assessments and suggestions, teaching in this course can be improved. The evaluation of teaching through the ISVU system is carried out using the "studomat" application on a form defined at the University of Rijeka level, and the results are anonymous. More information about all aspects of this process can be found in the University of Rijeka Study Quality Manual.

Academic integrity

Students are obliged to respect the principles of academic integrity and are referred to the documents of the University of Rijeka: *Code of Ethics of the University of Rijeka* and *Code of Ethics for Students*.