

<b>PATHOPHYSIOLOGY OF MALIGNANT TRANSFORMATION AND GROWTH</b>	
<b>GENERAL INFORMATION</b>	
Course coordinator	Professor Ivan Karner, MD, PhD
Assistant/Associate	
Study Programme	Integrated undergraduate and graduate university study of Medicine
Status of the course	Elective
Year of study, semester	3 <sup>rd</sup> year, 6 <sup>st</sup> semester
ECTS	<b>2</b>
Workload (hours)	Seminars (25)
Expected number of students	30
<b>COURSE DESCRIPTION</b>	
<b>Course objectives</b>	
Get to know, understand and independently interpret, especially with the creation and design of the algorithmic division of pathogenesis from given terms that stand in a cause – and effect relationship.	
<b>Enrolment requirements and entry competencies</b>	
Passed exam from the 2 <sup>nd</sup> year of study.	
<b>Learning outcomes at the Programme level</b>	
<b>1.1., 2.1.</b>	
<b>Learning outcomes (5-10)</b>	
<ol style="list-style-type: none"> <li>1. Critically judge the most important etiopathogenic factors that cause malignant transformation.</li> <li>2. Independently interpret numerous elements in the complex interrelationship of tumor disease pathogenesis.</li> <li>3. Interpret the mechanism of action of various endogenous and exogenous factors of carcinogenesis.</li> <li>4. Interpret and rank the elements of algorithmic relationships by importance.</li> <li>5. Evaluate and critically judge the importance of preventive measures and procedures in the occurrence and development of malignant disease.</li> </ol>	
<b>Course content</b>	
Seminars: <ol style="list-style-type: none"> <li>1. Disturbance of the cell cycle in carcinogenesis</li> <li>2. Chemical carcinogenesis</li> <li>3. Physical carcinogenesis</li> <li>4. Biological carcinogenesis</li> <li>5. Characteristics of malignant cells</li> <li>6. Kinetics of malignant growth</li> <li>7. Tumor-host relationship</li> </ol> Problem seminars (S) <ol style="list-style-type: none"> <li>1. General tumor etiopathogenesis.</li> <li>2. Pathogenetic groups of molecular mechanism of tumor growth.</li> <li>3. Pathophysiology of primary hyperparathyroidism caused by carcinomas.</li> <li>4. Pathogenesis of chronic myeloid leukemia.</li> <li>5. Pathogenic role of c-ras oncogene in lung adenocarcinomas.</li> <li>6. Pathogenic role of steroid receptors in breast cancer.</li> <li>7. Methods in oncology.</li> </ol>	

<b>Mode of teaching</b>						
Seminars						
<b>Student obligations</b>						
Students are expected to attend all class sessions, as well as to take all the examinations. However, they are allowed for excused absences, totalling 30% of all classes.						
<b>Monitoring student work (alignment of learning outcomes, teaching methods, and grading)</b>						
Teaching activity	ECTS	Learning outcome	Student activity	Assessment methods	Grade points	
					Min.	Max.
Class attendance	0,5	1-5	Class attendance;	Evidence sheet; evaluation	5	20
Seminars	0,5	1-5	Solving problems	Homework presentation	15	30
Final exam	1,0	1-5	Learning for the exam	Grading of the oral exam	30	50
<b>Total</b>	<b>2</b>				<b>50</b>	<b>100</b>
<i>Evaluation od final exam:</i>						
		<b>Student answer</b>		<b>Grade points</b>		
		The answer meets the minimum criteria		30.0		
		The average answer with noticeable errors		37.0		
		The very good answer with minor errors		44.0		
		The exceptional answer		50.0		
<i>Calculation od final grade:</i>						
Students who achieved 30 or more points in the final exam, the points obtained in the final exam are added to the grade points obtained during the class, and this sum constitutes the final grade. Since the study program schedule descriptive assessment of elective courses, the course coordinator awards the grade "passed" to a student who achieves 50 or more grade points in the course.						
<b>Required reading (available in the library and through other media)</b>						
				Number of copies in the library	Availability through other media	
1.Gamulin.S.,Marusic.M.,Kovac.Z. Patofiziologija,Knjiga prva,Medicinska naklada,Zagreb 2018.				6		
2.Kovac.Z.,Gamulin.S., ii sur. Patofiziologija.Zadatci za problemske seminare 2 izdanje,Medicinska naklada,Zagreb 2006.				14		
<b>Additional reading</b>						
<b>Course evaluation procedures</b>						

Anonymous, quantitative, standardized student survey providing feedback on& the course as well as on the work of course coordinators and their assistants/associates is being conducted by the QA Office of the Faculty of medicine Osijek.

**Note /Other**

E-learning does not count towards course contact hours, but is being used in teaching and comprises links to various web pages, as well as video and audio materials available on web pages.