

CODE : <b>BIOHUM 13</b>		COURSE TITLE: <b>PHOTOBIOPHYSICS</b>		ECTS: <b>3</b>	
COORDINATOR: <b>KRZYSZTOF POLEWSKI</b>			DEPARTMENT: <b>PHYSICS</b>		
COURSE CATEGORY					
VOLUME(H) <b>15</b>			PERSONAL WORK (H)		
LECTURE: (H) <b>15</b>	PRACTICALS /LAB (H)	PLACEMENT: (H)	PROJECT: (H)	OTHER MODALITIES: (H)	
EVALUATION:		OTHER MODALITIES:		LECTURER(S)	
EVALUATION MODALITIES				<b>KRZYSZTOF POLEWSKI</b>	
ORAL INDIVIDUAL REPORT					
WRITTEN INDIVIDUAL REPORT					
FINAL ORAL EXAM					
FINAL WRITTEN EXAM					
COMMENTS OF EVALUATION:			TEACHING METHODS: <b>LECTURES</b>		
SEMESTER: <b>WINTER OR SUMMER</b>			LANGUAGE: <b>ENGLISH</b>		
PERIOD:			YEAR OF STUDY: <b>SECOND/THIRD</b>		
OBJECTIVES					
To familiarize students with physical mechanisms of the interactions between light and biological structures					
CONTENTS					
<ul style="list-style-type: none"> <li>▪ Light and color in the nature and scientific laboratory.</li> <li>▪ Photophysical and photochemical interaction of light with biological macromolecules.</li> <li>▪ Plant photoreceptors: molecular basis of phytochrome system action - reception, transfer and control of information; role of chlorophylls, their precursors and derivatives in the capture, migration and transfer of energy.</li> <li>▪ Bacterial and animal photoreceptors: structure, function and mechanism of action of bacteriorhodopsin and rhodopsin.</li> <li>▪ Application of molecular photobiology: in medicine - photosensibilizers in diagnostics and treatment of cancer; in biotechnology and preservation of nature - monitoring, production and biomass utilization; in bionics – immobilized photoreceptors as transmitters of energy and information.</li> </ul>					
GROUP SIZE:		PRE-REQUISITES			