

CODE : <b>BIOHUM 03</b>		COURSE TITLE: <b>BIOPROCESS TECHNOLOGY</b>		ECTS: <b>8</b>	
COORDINATOR: <b>GRAŻYNA LEWANDOWICZ</b>			DEPARTMENT: <b>BIOTECHNOLOGY AND FOOD MICROBIOLOGY</b>		
Course Category					
VOLUME (H) <b>90</b>				PERSONAL WORK (H)	
LECTURE: (H) <b>45</b>	PRACTICALS / LAB (H) <b>45</b>		PLACEMENT: (H)	PROJECT: (H)	OTHER MODALITIES: (H)
EVALUATION:		OTHER MODALITIES:		LECTURER(S)	
EVALUATION MODALITIES				<b>GRAŻYNA LEWANDOWICZ</b> <b>TOMASZ JANKOWSKI</b> <b>RADOSŁAW DEMBCZYNSKI</b> <b>ROMAN MARECIK</b> <b>WOJCIECH BIALAS</b> <b>MICHAŁ WIECKOWICZ</b>	
ORAL INDIVIDUAL REPORT					
WRITTEN INDIVIDUAL REPORT					
FINAL ORAL EXAM					
FINAL WRITTEN EXAM		x			
COMMENTS OF EVALUATION:			TEACHING METHODS: <b>LECTURES &amp; LABS</b>		
SEMESTER: <b>WINTER</b>			LANGUAGE: <b>ENGLISH</b>		
PERIOD: <b>15 WEEKS</b>			YEAR OF STUDY: <b>THIRD</b>		
OBJECTIVES					
To familiarize students with downstream processes, designed for separation of desired product of microbial mass conversion from undesired ones.					
CONTENTS					
<ul style="list-style-type: none"> <li>▪ Types of bioproducts;</li> <li>▪ Physical properties of macromolecular solutions;</li> <li>▪ Harvesting of bioproducts – sedimentation and centrifugation;</li> <li>▪ Membrane separation processes;</li> <li>▪ Cell disintegration;</li> <li>▪ Extraction of bioproducts – solid-liquid and liquid-liquid extraction, supercritical extraction, aqueous two-phase extraction;</li> <li>▪ Product enrichment – precipitation, salting-out, chromatography;</li> <li>▪ Evaporation and criocentration;</li> <li>▪ Dehydration of bioproducts by air-drying and freeze-drying;</li> <li>▪ Immobilization of biocatalysts.</li> </ul>					
GROUP SIZE: <b>15</b>			PRE-REQUISITES:		