



BIOCHEMISTRY II	
Enrollment year	2014/2015
Academic year	2016/2017
Regulations	DM270
Academic discipline	BIO/10 (BIOCHEMISTRY)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOLOGICAL SCIENCES
Curriculum	PERCORSO COMUNE
Year of study	3°
Period	2nd semester (01/03/2017 - 14/06/2017)
ECTS	6
Lesson hours	48 lesson hours
Language	ITALIAN
Activity type	ORAL TEST
Teacher	TORTI MAURO (titolare) - 6 ECTS
Prerequisites	Detailed knowledge of structural and metabolic biochemistry as learned from the course at the II year.
Learning outcomes	
Course contents	<p>Coordinated regulation of metabolism. Integration of metabolic pathways. Metabolic profiles of liver, muscle, adipose tissue, brain. Metabolic adaption under short and prolonged starvation. Diabetes. Metabolism of ethanol.</p> <p>Drug metabolism. Role of liver in the metabolism of xenobiotics. The cytochrome P450 oxidases. Xenobiotic conjugation. Glutathione. Bilirubin metabolism.</p> <p>Sorting and targeting of proteins. Protein targeting to the nucleus, mitochondria, and peroxisomes. The secretory pathway. Protein glycosylation: O-linked and N-linked oligosaccharides. Role of</p>

	<p>mannose-6-phosphate in lysosomal targeting of proteins. Intracellular traffic of vesicles: clatrin, COPI and COPII. Receptor-mediated endocytosis.</p> <p>Blood biochemistry. Cholesterol and bile acids. Lipoproteins. Atherosclerosis. Hemostasis and thrombosis: coagulation, fibrinolysis, role of platelets and endothelial cells. Inflammation: macrophages and neutrophils function.</p> <p>Hormones biochemistry. Thyroid hormones. Steroid hormones. Hormones in calcium homeostasis. Biosynthesis, secretion, transport. Hormone signaling: receptors, intracellular effectors, second messengers. Protein phosphorylation in signaling cascades.</p>
Teaching methods	
Reccomended or required readings	<p>Nelson DL, COX, MM : I Principi di Biochimica di Lehninger, Zanichelli; Berg JM, Tymoczko JL, Stryer L: Biochimica, Zanichelli; Campbell, Farrell: Biochimica, Edises, Alberts et al: Biologia Molecolare della Cellula, Zanichelli Murray et al: Harper Biochimica, McGraw</p>
Assessment methods	verbal exam
Further information	
Sustainable development goals - Agenda 2030	\$lbl legenda sviluppo sostenibile