

Course Title	Nutrition and metabolism				
Course Code	BMS313				
Course Type	Compulsory				
Level	Bachelor (1st Cycle)				
Year / Semester	3 <sup>rd</sup> Year / 5 <sup>th</sup> Semester				
Teacher's Name	TBA				
ECTS	5	Lectures / week	3 Hours	Laboratories / week	None
Course Purpose and Objectives	<p>The objective of this course is familiarizing students with the processes of digestion, absorption of food as well as the metabolic degradation pathways involved, storage and biosynthesis of macronutrients and their regulation mechanisms. Moreover, the basic mechanisms by which the composition of diet affects metabolic pathways and ultimately determines the function of human body will also be discussed. Finally, students will study the most important categories of micronutrients, their allocation to the various food categories, their metabolism and their interaction with the pathophysiological mechanisms of the human body.</p>				
Learning Outcomes	<p>Upon completion of this course students will be able to:</p> <ul style="list-style-type: none"> <li>• identify the main categories of macronutrients and understand their most important physicochemical properties</li> <li>• recall the ways in which protein, carbohydrate and fat are digested and metabolized by human body</li> <li>• recognize the metabolic mechanisms regulating macronutrients and understands how they contribute to homeostasis</li> <li>• describe the metabolic differences in various organs depending on the functional role of each one</li> <li>• predict how the composition of food can affect metabolism and what are the regulatory mechanisms involved</li> <li>• describe the metabolism, the biochemical and physiological effects of macronutrients and through these to be able to assess the needs of the organism in these macronutrients</li> </ul>				
Prerequisites	BMS111, CHE104	Co-requisites	None		
Course Content	<ul style="list-style-type: none"> <li>• Digestion, absorption, bioavailability and metabolism of macronutrients (carbohydrates, lipids, proteins / amino acids).</li> <li>• Biological and physiological effects of macronutrients.</li> <li>• Macronutrient metabolism at the cellular level and organismal level.</li> <li>• Mechanisms of maintaining homeostasis.</li> </ul>				

	<ul style="list-style-type: none"> <li>• Effect of composition of food on the hormonal system that regulates the metabolism of macronutrients.</li> <li>• Interactions between nutrients and metabolic pathways.</li> <li>• Variations of metabolism in various organs. Transfer of nutrients between the organs.</li> <li>• Effect of nutrient metabolism in body function.</li> <li>• Classification, chemical structure, nomenclature, chemical properties of micronutrients (vitamins, minerals, trace elements, polyphenols, lipid compounds, other antioxidant compounds).</li> <li>• Digestion, absorption, bioavailability, metabolism, biological and physiological effects of micronutrients.</li> </ul>										
Teaching Methodology	Face- to- face										
Bibliography	<p>Groff JL., Hunt SM, Stepnick Gropper S. Advanced nutrition and human metabolism.</p> <p>Berdanier CD, Zempleni J, <i>Advanced Nutrition: Macronutrients, Micronutrients, and Metabolism</i> (1<sup>st</sup> Edition), CRC, 2008.</p> <p>Gibney MJ, Vorster HH, Kok FJ. Introduction to Human Nutrition (The nutrition society textbook).</p>										
Assessment	<table border="1"> <tr> <td>Mid – Term Examination</td> <td>30%</td> </tr> <tr> <td>Final Examination</td> <td>50%</td> </tr> <tr> <td>Assignments</td> <td>10%</td> </tr> <tr> <td>Class Participation</td> <td>10%</td> </tr> <tr> <td></td> <td>100%</td> </tr> </table>	Mid – Term Examination	30%	Final Examination	50%	Assignments	10%	Class Participation	10%		100%
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Language	English										