<table>
<tr><td>Level</td><td colspan="6">Level - 05</td></tr>
<tr><td>Course synopsis
Course Code</td><td colspan="6">CYU5306</td></tr>
<tr><td>Course Title</td><td colspan="6">Biochemistry</td></tr>
<tr><td>Credit value</td><td colspan="6">3</td></tr>
<tr><td>Core/Optional</td><td colspan="6">optional</td></tr>
<tr><td>Prerequisites</td><td colspan="6">pass grade/CR/valid OCAM in CYU5304 or pass grade/eligibility in CMU3124</td></tr>
<tr><td rowspan="2">Hourly Breakdown</td><td colspan="2">Theory</td><td>Practical hours</td><td>Independent Learning</td><td>Assessments</td><td>Total hrs</td></tr>
<tr><td>24 Sessions × 2 = 48hrs</td><td>2DS +1RDS × 4 hrs = 12 hrs</td><td>N/A</td><td>▪ Sessions (24 x 3) = 72hrs
▪ Online learning resources + recommended readings = 16hrs</td><td>▪ 2 Continuous Assessments (CA) × 1 hr =2hrs</td><td>150</td></tr>
<tr><td>Course Aim/s</td><td colspan="6">Aim of this course is to provide the basic knowledge of biochemical pathways, basic reactions of biomolecules using enzymes and synthesis and degradation of major biomolecules in living systems.</td></tr>
<tr><td>Programme Learning Outcomes (PLO) addressed by course</td><td colspan="6">PLO1: Theoretical Knowledge: Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the BSc degree.
PLO3: Communication: Communicate effectively to present information, ideas and concepts to the scientific community as well as to the wider society whilst being able to comprehend, write effective reports and design documentation</td></tr>
<tr><td>Course Learning Outcomes (CLO):</td><td colspan="6">At the completion of this course student will be able to
CLO1: Describe the cellular metabolism of of major biomolecules (carbohydrates, Fat and Proteins) in terms of energy production (PLO1)
CLO2: Describe enzyme kinetics and role of enzymes in regulating biochemical pathways (PLO1)
CLO3: Solving basic chemical calculations in enzyme kinetics related to CLO2 and use communication skills in online learning resources through MOODLE(PLO1 and PLO3)</td></tr>
<tr><td>Content (Main topics, sub topics)</td><td colspan="6">Introduction to basic principles of cellular metabolism. Introduction to energy production from the citric acid cycle, electron transport chain and oxidative phosphorylation, introduction to photosynthesis, Introduction to enzymes and enzyme kinetics. Introduction to competitive, non-competitive an uncompetitive inhibition of enzymes and their characteristics. Control of direction of pathways by enzymes. Introduction to allosteric regulations, covalent modifications and different mechanisms of enzyme action, Introduction to Glycolysis, Gluconeogenesis and Pentose Phosphate Pathway. Introduction to Glycogenolysis and Glycogenesis, Introduction to biosynthesis and oxidation of fatty acids. Introduction to degradation of amino acids and biosynthesis of proteins.</td></tr>
<tr><td>Teaching-Learning methods</td><td colspan="6">Self-learning:
• Instructional material (IL)
• Online activities, a MOODLE supplementary based course (OL)
Compulsory contact sessions:
• Assessments: structured essay (SEQ)</td></tr>
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	Non-compulsory contact sessions: • Day school (DS)	
Assessment Strategy	Overall Continuous Assessment Mark (OCAM): 40%	Final Assessment: 60 %
	Theory (100%): NBT: MCQ/SEQ – 2 x 1hrs OCAM Computation: 60% of the higher assignment test mark + 40% of the other assignment test mark	Final Evaluation Theory examination – 2h
Recommended Reading	1. Cox, Michael M, Nelson, David L.(2008) *Lehninger Principles of Biochemistry*, 5th ed W.H. Freeman publishers 2. Armstrong, Frank B. (1989) *Biochemistry,* OUP publishers 3rd ed	