

Subject Description Form

Subject Code	ABCT1001							
Subject Title	Quantitative Skills for Chemical and Life Sciences							
Credit Value	3							
Level	1							
Pre-requisite/ Co-requisite/ Exclusion								
Objectives	This subject is to provide students with the basic quantitative skills required for undergraduate Chemical and Life Sciences studies.							
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> Develop quantitative skills required to solve problems in their discipline Develop elementary data treatment and presentation techniques relevant to chemistry and life sciences Apply these quantitative skills for problem-solving relevant to chemistry and life sciences applications Able to undertake further learning in quantitative skills required for more advanced study 							
Subject Synopsis/ Indicative Syllabus	Commonly used units and unit conversions for science, volumetric calculations, reaction rate and rate law including enzymes kinetics, integrated rate laws, scientific graph plotting, excel data treatment, standard deviation and normal distribution, finding maxima and minima, linear regression.							
Teaching/Learning Methodology	By lectures, tutorials and exercises							
Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks		% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)				
				a	b	c	d	
	1. Tests/assignments		40%	✓	✓	✓	✓	
	2. Examination		60%	✓	✓	✓	✓	
	Total		100 %					
<p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>By learning how to solve a collection of theoretical and practical</p>								

	scientific problems designed and distributed in assignments, tests and examination, the students will master the basic quantitative techniques required for various disciplines, and will be able to apply the techniques to model and solve simple practical problems in their discipline.	
Student Study Effort Expected	Class contact:	
	▪ lecture	26 Hrs.
	▪ tutorial	13 Hrs.
	Other student study effort:	
	▪ self-study	66 Hrs.
	Total student study effort	105 Hrs.
Reading List and References	<p>Selected topics from the following references.</p> <ol style="list-style-type: none"> 1. David Phoenix, Introductory Mathematics for the Life Sciences (1997) Taylor & Francis 2. Frank H. Stephenson, Calculations for Molecular Biology and Biotechnology (2016) Academic Press. 3. Martin Brokate, Pammy Manchanda, Abul Hasan Siddiqi, Calculus for Scientists and Engineers (2019) Springer. 	