

B.Comp. (Hons.) in Computational Biology Summary of Module Requirements and Credits

Summary of module requirements and credits for cohort matriculated in AY 2004/2005 & after

Modular Requirements		MCs
University Requirements		28
2 x GEMs	8	
1 x Singapore Studies	4	
4 x Breadth ^ CM1121 BASIC ORGANIC CHEMISTRY** ^ LSM1101 BIOCHEMISTRY AND BIOMOLECULES** ^ MA1101R LINEAR ALGEBRA** ^ PC1432 PHYSIC IIE**	16	
Faculty Requirements		
CS1104 COMPUTER ORGANIZATION	4	16
CS2103 SOFTWARE ENGINEERING	4	
CS2105 COMPUTER NETWORKS I	4	
CS2301 BUSINESS AND TECHNICAL COMMUNICATIONS	4	
Major Requirements		
Level 1000/2000 Essential**		52
CS1101S or CS1101C PROGRAMMING METHODOLOGY	5	
CS1102S or CS1102C DATA STRUCTURES AND ALGORITHMS	5	
CS1231 DISCRETE STRUCTURES <u>OR</u> MA2214 COMBINATORIAL ANALYSIS	4	
LSM1102 MOLECULAR GENETICS	4	
MA1102R CALCULUS	4	
CS2102 DATABASE SYSTEMS	4	
CS2220 INTRODUCTION TO COMPUTATIONAL BIOLOGY ## <u>OR</u> LSM2104 ESSENTIAL BIOINFORMATICS AND BIOC COMPUTING ##	4	
LSM2101 METABOLISM AND REGULATION	4	
LSM2102 MOLECULAR BIOLOGY	4	
LSM2201 EXPERIMENTAL BIOCHEMISTRY <u>OR</u> LSM2202 EXPERIMENTAL MOLECULAR AND CELL BIOLOGY	6	
ST2131 PROBABILITY	4	
ST2132 MATHEMATICAL STATISTICS	4	
Level 3000 Essential		
CS3230 DESIGN & ANALYSIS OF ALGORITHMS	4	
LSM3231 PROTEIN STRUCTURE AND FUNCTION	4	
MA3259 MATHEMATICAL METHODS IN GENOMICS ##	4	
Level 3000 Electives; Choose any <u>THREE</u> from the following		12
CS3103 COMPUTER NETWORKS II		
CS3232 SYSTEMS MODELING AND SIMULATION		
CS3240 HUMAN-COMPUTER INTERACTION		
CS3241 COMPUTER GRAPHICS		
CS3243 FOUNDATIONS OF ARTIFICIAL INTELLIGENCE		
CS3244 MACHINE LEARNING & NEURAL NETWORKS		
CS3225 POST-GENOME INFORMATICS ## (New module)		
Level 4000 Essential		20
CS4101 HONOURS PROJECT ## (Theme of project is on Computational Biology)	12	

CS4220 COMPUTATIONAL ANALYSIS OF BIOLOGICAL DATA ## (New module)	4	
LSM4241 FUNCTIONAL GENOMICS	4	
Level 4000 Electives; Choose any <u>TWO</u> of the following CS4221 DATABASE DESIGN CS4231 PARALLEL AND DISTRIBUTED ALGORITHMS CS4234 COMBINATORIAL & GRAPH ALGORITHMS CS4235 COMPUTATIONAL GEOMETRY CS4242 UNCERTAINTY MODELING IN ARTIFICIAL INTELLIGENCE CS4244 KNOWLEDGE-BASED SYSTEMS CS4248 NATURAL LANGUAGE PROCESSING		8
Unrestricted Electives		12
Total		160 MCs

** Modules are part of the lower division requirements for the Computational Biology Program.

^ Students are required to read these modules to fulfil part of their Breadth Requirements.

Integrated modules.