

Chemistry, Faculty of Science
Summary of Module Requirements and Credits

Summary of module requirements and credits for cohort matriculated in AY 2003/2004 & later - BSc (Hons) (majoring in Chemistry with Minor in Life Sciences)

Modular Requirements		MCs
University Requirements		16
2 x GEMs		
1 x Singapore Studies		
CN1111 Chemical Engineering Principles		
Faculty Requirements		12
4 MCs to be satisfied by LSM1101; students need to only take 2 more elective modules		
LSM1101 Biochemistry of Biomolecules		
LSM1102 Molecular Genetics		
MA1421 Basic Applied Mathematics for Sciences or MA1102R Calculus		
Major Requirements		100
CM1111 Inorganic Chemistry I		
CM1121 Organic Chemistry I		
CM1131 Physical Chemistry I		
CM1191 Experiments in Chemistry I		
CM2191 Experiments in Chemistry II		
CM2192 Experiments in Chemistry III		
CM2101 Principles of Spectroscopy		
CM2111 Inorganic Chemistry		
CM2121 Organic Chemistry		
CM2142 Analytical Chemistry		
Level 3000 modules (exclude CM3x6x modules):		
CM3291 Inorganic & Organic Laboratory CM3292 Analytical and Physical Laboratory CM3221 Organic Synthesis & Spectroscopy CM3222 Organic Reaction Mechanisms	and 2 more level 3000 or higher CM module	
CM4199A Honours Project in Chemistry		
Level 4000 CM & LSM modules:		
CM42xx any other Level 4000 elective	LSM4211 Toxicology	
CM4222 Adv Organic Synthesis & Spectroscopy	LSM4221 Drug Discovery & Clinical Trials)	
CM4227 Chemical Biology		
Unrestricted Elective Modules		
The following modules must be taken		
LSM2101		
LSM2102		
LSM2103		
LSM2201A/LSM2202A,		
LSM3211		
LSM3231		
PR5212		
CN2116		
CN2121		
and can be used to satisfy <u>the 38 MCs</u> required in this category.		
Total		166

Chemical Engineering, Faculty of Engineering
Summary of Module Requirements and Credits – for AY13/14 intake

Modular Requirements		MCs
University Requirements		20
2 x GEMs (At least 1 GEM from Group B : Humanities & Social Sciences)	8	
1 Singapore Studies module	4	
2 Elective Modules outside student's faculty LSM1102 Molecular Genetics and LSM2102 Molecular Biology may be taken to fulfill this requirement.	8	
Faculty Requirements		10
ES1531 Critical Thinking and Writing	4	
HR2002 Human Capital in Organizations	3	
EG2401 Engineering Professionalism	3	
English (For students who have not passed or been exempted from the Qualifying English Test at the time of admission to the Faculty)		
Chemical Engineering Major Requirements		
Engineering Core Modules		66
CN1111 Chemical Engineering Principles	4	
CN2108 Chemical Engineering Laboratory I	2	
CN2116 Chemical Kinetics and Reactor Design	4	
CN2121 Chemical Engineering Thermodynamics	4	
CN2122 Fluid Mechanics	4	
CN2125 Heat and Mass Transfer	4	
CN3108 Chemical Engineering Laboratory II	4	
CN3109 Chemical Engineering Laboratory III	2	
CN3124 Fluid-Solid Systems	3	
CN3121 Chemical Process Dynamics and Control	4	
CN3132 Separation Processes	4	
CN3421 Process Modeling and Numerical Simulation	4	
CN3135 Process Safety, Health and Environment	3	
CN4118R B.Eng Dissertation (<i>related to Life/Chemical Sciences</i>)	10	
CN4122 Process Synthesis and Simulation	3	
CN4123 Design Project	7	
Restricted Electives		16
CM3221 Organic Synthesis & Spectroscopy must be taken + 3 to be chosen from LSM3211 Fundamental Pharmacology (4MC) LSM3224 Molecular Basis of Human Diseases (4MC) LSM3231 Protein Structure & Function (4MC) LSM3232 Microbiology (4MC) LSM4211 Toxicology (4MC) LSM4221 Drug Discovery & Clinical Trials (4MC) CM4221 Chemistry of Natural Products (4MC) CM4222 Advanced Organic Synthesis & Spectroscopy (4MC)		
Science and Mathematics Modules		28
LSM1401 Fundamentals of Biochemistry Replaced by LSM1101 Biochemistry of Biomolecules	4	
MA1505 Mathematics I	4	
MA1506 Mathematics II	4	
CM1501 Organic Chemistry for Engineers	4	
CM1502 General and Physical Chemistry for Engineers Replaced by CM2142 Analytical Chemistry 1	4	
IT1005 Introduction to Programming with Matlab	4	
MLE1101 Introductory Materials Science and Engineering	4	
Unrestricted Elective Modules		
The following modules must be taken ES2331 Communicating Engineering ¹ LSM1301 General Biology (for those without A-level Biology) LSM2101 Metabolism & Regulation LSM2103 Cell Biology LSM2201A/ Experimental Biochemistry or LSM2202A Experimental Molecular & Cell Biology CM2121 Organic Chemistry		20-24
Total		160-164

¹All students admitted from AY2012/2013 onwards are required to read an additional requirement, ES2331 *Communicating Engineering*, on a graded basis as Breadth OR as Unrestricted Elective.