

## LIFE SCIENCES UNDERGRADUATE PROGRAMME: MAJOR IN LIFE SCIENCES

### BSc (Hons) / BSc in Life Sciences (For Matriculation Cohort AY2014/2015)

Along with General Education, Faculty Requirements and Unrestricted Elective Modules, to be awarded a BSc (Hons) or BSc in Life Sciences, candidates must satisfy the following:

MODULE LEVEL	PRIMARY MAJOR IN LIFE SCIENCES REQUIREMENTS (FOR MATRICULATION COHORT AY14/15)	CUMULATIVE MAJOR MCs
<b>Level 1000</b> (24 MCs)	Pass LSM1101, LSM1102, LSM1103, LSM1104, CM1401* and ST1232*. (If a precluding module to CM1401 (i.e. CM1121 or CM1402 or CM1501) is passed, the precluding module is accepted to be fulfilling the Major in Life Sciences in lieu of CM1401.)	<b>24</b>
<b>Level 2000</b> (20 MCs)	Pass LSM2101, LSM2102, LSM2103, and LSM2191, and <b>one</b> of the following: LSM2241, LSM2251, and LSM2291.	<b>44</b>
<b>Level 3000</b> (20 MCs)	Pass <b>five</b> LSM32xx elective modules (except LSM3289), one of which may be a LSM-recognised elective module (up to 4 MCs).	<b>64</b>
<b>Level 4000</b> (32 MCs) [For BSc (Hons)]	Pass at least 32 MCs via one of the following options:  <u><b>Honours Research Project</b></u> Pass LSM4199 Honours Project in Life Sciences, AND pass another <b>four</b> LSM42xx elective modules. [If one of the three specialisations (BMS/MCB/EVB) is to be pursued, LSM4199 and at least <b>two</b> of the <b>four</b> LSM42xx elective modules have to be completed, all listed with the chosen specialisation.]  <u><b>Applied Internship Project</b></u> Pass LSM4299 Applied Project in Life Sciences, AND pass another <b>four</b> LSM42xx elective modules. [If one of the three specialisations (BMS/MCB/EVB) is to be pursued, <b>two</b> more LSM42xx elective modules have to be completed; all <b>six</b> LSM42xx elective modules listed with the chosen specialisation.]  <u><b>Coursework Taught Modules</b></u> Pass <b>8</b> LSM42xx elective modules. [If one of the three specialisations (BMS/MCB/EVB) is to be pursued, at least <b>six</b> of the <b>eight</b> LSM42xx elective modules have to be listed with the chosen specialisation.]	<b>96</b>

	BSc	BSc (Hons)
<b>University Level Requirements</b>	20 MCs	20 MCs
<b>Faculty Requirements</b>	4 MCs*	8 MCs*
<b>Major Requirements</b>	64 MCs	96 MCs
<b>Unrestricted Elective Modules</b>	32 MCs	36 MCs
<b>Total</b>	<b>120 MCs</b>	<b>160 MCs</b>

To qualify for Honours year, students must fulfill the Life Sciences Major Requirements at BSc standard (i.e. Levels 1000, 2000 and 3000 Major Requirements), and obtained a minimum overall CAP of 3.20 on completion of 100 MCs (Modular Credits) or more.

Note: The number of MCs earned from Level 1000 modules for graduation requirements is capped at 60.

**Faculty Requirements for Life Sciences Major:**

Please refer to the following web page for details and subject groupings:

<http://www.science.nus.edu.sg/undergraduate-studies/ugreq/curriculum-structure?id=212>

\* Faculty Requirements are at 12 MCs (BSc) and 16 MCs (BSc (Hons)) respectively. Major modules CM1401 and ST1232 satisfy 8 MCs of the Faculty Requirements. **DO NOT read ST1131 or ST2334.**

**Modules that can be used to fulfill Faculty Requirements:**

- Module 1: **CM1401** (4 MCs; recognised as Major Requirements)
- Module 2: **ST1232** (4 MCs; recognised as Major Requirements)
- Module 3: **1 module** from Physical Sciences OR Computing Sciences OR Multidisciplinary & Interdisciplinary Sciences subject group) (4 MCs)
- Module 4 [for BSc (Hons)]: **1 module** from any subject group except LSM-prefixed modules (4 MCs)

To be awarded at BSc (Hons) level a primary major in Life Sciences, candidates must satisfy the following [**For Matriculation Cohort AY2014/2015**]:

Level	Major in Life Sciences Requirements (For Matriculation Cohort AY14/15)	Cumulative Major MCs
Level 1000 (24MCs)	<p><b>Pass all</b></p> <p>LSM1101 Biochemistry of Biomolecules            LSM1102 Molecular Genetics            LSM1103 Biodiversity            LSM1104 General Physiology            CM1401 Chemistry for Life Sciences            ST1232 Statistics for Life Sciences</p> <p><i>(If a precluding module to CM1401 (i.e. CM1121 or CM1402 or CM1501) is passed, the precluding module is accepted to be fulfilling the Major in Life Sciences in lieu of CM1401.)</i></p>	24
Level 2000 (20MCs)	<p><b>Pass all</b></p> <p>LSM2101 Metabolism and Regulation            LSM2102 Molecular Biology            LSM2103 Cell Biology            LSM2191 Laboratory Techniques in Life Sciences</p> <p><b>Pass 1</b></p> <p>LSM2241 Introductory Bioinformatics            LSM2251 Ecology and Environment            LSM2291 Fundamental Techniques in Microbiology</p>	44
Level 3000 (20MCs)	<p><b>Pass 5 LSM32xx elective modules</b> (except LSM3289), one of which may be a LSM-recognised elective module (up to 4MCs).</p> <p>LSM3201 Research and Communication in Life Sciences            LSM3211 Fundamental Pharmacology            LSM3212 Human Physiology: Cardiopulmonary System            LSM3214 Human Physiology – Hormones and Health            LSM3215 Neuronal Signaling and Memory Mechanisms            LSM3216 Neuronal Development and Diseases            LSM3217 Human Ageing            LSM3218 Cardiopulmonary Pharmacology            LSM3219 Neuropharmacology            (LSM3221) (Human Pharmacology) – <i>Not offered AY2016/2017 onwards</i>            LSM3223 Immunology            LSM3224 Molecular Basis of Human Diseases            LSM3225 Molecular Microbiology in Human Diseases            LSM3231 Protein Structure and Function            LSM3232 Microbiology            LSM3233 Developmental Biology            LSM3234 Biological Imaging of Growth and Form            LSM3241 Genomic Data Analysis            LSM3242 Translational Microbiology            LSM3243 Molecular Biophysics            LSM3245 RNA Biology and Technology            LSM3246 Synthetic Biology            LSM3252 Evolution and Comparative Genomics            LSM3254 Ecology of Aquatic Environments            LSM3255 Ecology of Terrestrial Environments            LSM3256 Tropical Horticulture            LSM3257 Quantitative Methods for Ecological Research            LSM3258 Comparative Botany            LSM3259 Fungal Biology            LSM3262 Environmental Animal Physiology            LSM3263 Field Studies in Neotropical Ecosystems            LSM3264 Environmental Biochemistry            LSM3265 Entomology            LSM3266 Avian Biology and Evolution            LSM3267 Behavioural Biology            LSM3272 Global Change Biology            LSM3273 Ecology, Conservation and Management of Sri Lankan Ecosystems            LSM3288 Advanced UROPS in Life Sciences I</p>	64

Level 4000 (32MCs)	Pass at least 32 MCs via one of the following options:  <b><u>Honours Research Project</u></b> Pass LSM4199 Honours Project in Life Sciences, AND pass another <b>4</b> LSM42xx elective modules. [If one of the three specialisations (BMS/MCB/EVB) is to be pursued, LSM4199 and at least <b>2</b> of the <b>4</b> LSM42xx elective modules have to be completed, all listed with the chosen specialisation.]  <b><u>Applied Internship Project</u></b> Pass LSM4299 Applied Project in Life Sciences, AND pass another <b>4</b> LSM42xx elective modules. [If one of the three specialisations (BMS/MCB/EVB) is to be pursued, <b>2</b> more LSM42xx elective modules have to be completed; all <b>6</b> LSM42xx elective modules listed with the chosen specialisation.]  <b><u>Coursework Taught Modules</u></b> Pass <b>8</b> LSM42xx elective modules. [If one of the three specialisations (BMS/MCB/EVB) is to be pursued, at least <b>6</b> of the <b>8</b> LSM42xx elective modules have to be listed with the chosen specialisation.]	96
	LSM4199 Honours Project in Life Sciences LSM4299 Applied Project in Life Sciences	
	LSM4211 Toxicology LSM4212 Pharmacogenetics and Drug Responses LSM4213 System Neurobiology LSM4214 Cancer Pharmacology LSM4215 Extreme Physiology LSM4217 Functional Ageing LSM4221 Drug Discovery and Clinical Trials LSM4222 Advanced Immunology LSM4223 Advances in Antimicrobial Strategies LSM4225 Genetic Medicine in the Post-Genomic Era LSM4226 Infection and Immunity LSM4227 Stem Cell Biology LSM4228 Experimental Models for Human Disease and Therapy LSM4229 Therapeutic and diagnostic agents from animal toxins	Biomedical Science (BMS)
	LSM4231 Structural Biology LSM4232 Advanced Cell Biology LSM4234 Mechanobiology LSM4235 Nuclear Mechanics and Genome Regulation LSM4241 Functional Genomics LSM4242 Protein Engineering LSM4243 Tumour Biology LSM4244 Oncogenes and Signal Transduction LSM4245 Epigenetics and Chromatin Biology LSM4251 Plant Growth and Development LSM4252 Animal Reproduction	Molecular and Cell Biology (MCB)
	LSM4254 Principles of Taxonomy and Systematics LSM4255 Methods in Mathematical Biology LSM4256 Evolution of Development LSM4257 Aquatic Vertebrate Diversity LSM4261 Marine Biology LSM4262 Tropical Conservation Biology LSM4263 Field Studies in Biodiversity LSM4264 Freshwater Biology LSM4265 Urban Ecology LSM4266 Aquatic Biodiversity LSM4267 Animal Communications & Sensory Ecology	Environmental Biology (EVB)

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