LIFE SCIENCES UNDERGRADUATE PROGRAMME: MAJOR IN LIFE SCIENCES

Schedule for Completion of BSc (Hons) in Life Sciences – Matriculation Cohort AY2017/2018

Typical Study Plan for reading Life Sciences as Primary Major. Numbers in [ ] indicates Modular Credits (MCs).

<table>
<thead>
<tr>
<th>Semester</th>
<th>Life Sciences Major Requirements</th>
<th>Other Graduation Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3rd Semester (Sem 1) &amp; 4th Semester (Sem 2)</strong></td>
<td>LSM2191 Laboratory Techniques in Life Sciences [4] <strong>Pass 3 LSM22xx</strong> (except LSM2288/9) [3x4=12]</td>
<td><strong>Unrestricted Elective Modules (UEMs) – 48 MCs or typically 12 modules</strong> Use the UEMs to complete another Major/Minor programme! Potential pairing with:</td>
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<td><strong>5th Semester (Sem 1) &amp; 6th Semester (Sem 2)</strong></td>
<td><strong>Pass 4 LSM32xx</strong> (except LSM3289), one of which may be a LSM-recognised elective module [4x4=16]</td>
<td><strong>Second Major [Typically 12 modules]:</strong> - Chemistry - Physics - Statistics - Economics - Geography - Psychology (direct admission available) - Sociology - Management (direct admission available)</td>
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<td><strong>7th Semester (Sem 1) &amp; 8th Semester (Sem 2)</strong></td>
<td><strong>Pass the Honours Year 32 MCs via one of the following options:</strong></td>
<td><strong>Minor [Typically 6 modules]:</strong> - Aquatic Ecology - Analytical Chemistry - Biophysics - Forensic Science - Geosciences - Management - Medical Physics - Pharmaceutical Sciences - Psychology - Public Health (direct admission available)</td>
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<tr>
<td><strong>Coursework Taught Modules</strong></td>
<td><strong>Honours Research Project</strong> Pass LSM4199 Honours Project in Life Sciences, AND pass another <strong>4 LSM42xx</strong> elective modules.</td>
<td><strong>Typical workload for one semester is 20 MCs (5 modules). Students are advised to read modules on top of the Major modules to fulfill other graduation requirements.</strong></td>
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<td><strong>Applied Internship Project</strong> Pass LSM4299 Applied Project in Life Sciences, AND pass another <strong>4 LSM42xx</strong> elective modules.</td>
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<td><strong>Choose to complete a specialisation (or none):</strong></td>
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<td></td>
<td>- Biomedical Sciences - Molecular and Cell Biology - Environmental Biology</td>
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<thead>
<tr>
<th>BSc – 3 Years</th>
<th>BSc (Hons) – 4 Years</th>
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<tbody>
<tr>
<td>General Education</td>
<td>20 MCs</td>
</tr>
<tr>
<td>Faculty Requirements</td>
<td>8 MCs</td>
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<tr>
<td>Major Requirements</td>
<td>52 MCs</td>
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<tr>
<td>Unrestricted Elective Modules</td>
<td>40 MCs</td>
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<tr>
<td>Total</td>
<td>120 MCs</td>
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</table>

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 or more.
**LIFE SCIENCES UNDERGRADUATE PROGRAMME: MAJOR IN LIFE SCIENCES**

**List of Life Sciences Major (LSM) Modules**

**Level 1000/2000 LSM Essentials**
- Molecular Genetics
- Molecular Cell Biology
- Evolutionary Biology
- Chemistry for Life Sciences
- Statistics for Life Sciences
- Laboratory Techniques in Life Sciences

**Level 2000 LSM Electives**
- Metabolism and Regulation
- Human Anatomy
- General Physiology
- Genes and Genomes
- Cell Biology
- Physical Concepts in Biology
- Introductory Bioinformatics
- Ecology and Environment
- Biodiversity
- Applied Data Analysis in Ecology and Evolution
- Fundamental Techniques in Microbiology

**Level 30xx LSM Electives**
- Research and Communication in Life Sciences
- Fundamental Pharmacology
- Human Physiology: Cardiopulmonary System
- Human Physiology – Hormones and Health
- Neuronal Signaling and Memory Mechanisms
- Neuronal Development and Diseases
- Human Ageing
- Cardiopulmonary Pharmacology
- Neuropathology
- Human Neuroanatomy
- Immunology
- Molecular Basis of Human Diseases
- Molecular Microbiology in Human Diseases
- Protein Structure and Function
- Microbiology
- Developmental Biology
- Biological Imaging of Growth and Form
- Genomic Data Analysis
- Translational Microbiology
- Molecular Biophysics
- RNA Biology and Technology
- Synthetic Biology
- Practical Synthetic Biology
- Evolution and Comparative Genomics
- Ecology of Aquatic Environments
- Ecology of Terrestrial Environments
- Tropical Horticulture
- Comparative Botany
- Fungal Biology
- Environmental Animal Physiology
- Field Studies in Neotropical Ecosystems
- Environmental Biochemistry
- Entomology
- Avian Biology and Evolution
- Behavioural Biology
- Global Change Biology

**Level 40xx LSM Electives**
- Toxicology
- System Neurobiology
- Cancer Pharmacology
- Extreme Physiology
- Functional Ageing
- Drug Discovery and Clinical Trials
- Advanced Immunology
- Advances in Antimicrobial Strategies
- Genetic Medicine in the Post-Genomic Era
- Infection and Immunity
- Stem Cell Biology
- Experimental Models for Human Disease and Therapy
- Therapeutic and diagnostic agents from animal toxins

**Level 22xx LSM Electives**
- Metabolism and Regulation
- Human Anatomy
- General Physiology
- Genes and Genomes
- Cell Biology
- Physical Concepts in Biology
- Introductory Bioinformatics
- Ecology and Environment
- Biodiversity
- Applied Data Analysis in Ecology and Evolution
- Fundamental Techniques in Microbiology

**Level 42xx Biomedical Science LSM Electives**
- Toxicology
- System Neurobiology
- Cancer Pharmacology
- Extreme Physiology
- Functional Ageing
- Drug Discovery and Clinical Trials
- Advanced Immunology
- Advances in Antimicrobial Strategies
- Genetic Medicine in the Post-Genomic Era
- Infection and Immunity
- Stem Cell Biology
- Experimental Models for Human Disease and Therapy
- Therapeutic and diagnostic agents from animal toxins

**Level 42xx Molecular & Cell Biology LSM Electives**
- Structural Biology
- Advanced Cell Biology
- Mechanobiology
- Nuclear Mechanics and Genome Regulation
- Functional Genomics
- Protein Engineering
- Tumour Biology
- Oncogenes and Signal Transduction
- Epigenetics and Chromatin Biology
- Plant Growth and Development
- Animal Reproduction

**Level 42xx Environmental Biology LSM Electives**
- Principles of Taxonomy and Systematics
- Methods in Mathematical Biology
- Evolution of Development
- Marine Biology
- Tropical Conservation Biology
- Field Studies in Biodiversity
- Freshwater Biology
- Urban Ecology
- Aquatic Biodiversity
- Animal Communications & Sensory Ecology

For more information, please visit our website –
http://lifesciences.nus.edu.sg/admissions.html