

**Curriculum for CN Yang Scholars Programme
Biological Sciences
(For AY2020-21 intake)**

| Course Type | AU |
|----------------------------|------------|
| Core Courses | 73 |
| Major Prescribed Electives | 24 |
| GER-Core | 17 |
| GER-PE | 0 |
| Unrestricted Electives | 24 |
| Total | 138 |

| | Course Code | Course Title | Type | AU |
|------------------------------|-------------|--------------------------------------|------|-----------|
| Year 1 Semester 1 | CY1001 | Introductory Biology | Core | 3 |
| | CY1101 | Principles of Modern Chemistry | Core | 3 |
| | CY1308 | Physics | Core | 3 |
| | CY1500 | Introductory Research Methodology | Core | 3 |
| | CY1601 | Mathematics I | Core | 4 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | | | | Total AUs |

| | Course Code | Course Title | Type | AU |
|------------------------------|-------------|---|------|-----------|
| Year 1 Semester 2 | CY1007 | Climate Change | Core | 3 |
| | CY1307 | Relativity and Quantum Physics | Core | 3 |
| | CY1400 | CNYSP Undergraduate Research Experience | Core | 3 |
| | CY1602 | Mathematics II | Core | 4 |
| | BS1005 | Biochemistry I | Core | 3 |
| | BS1006 | Principles of Genetics | Core | 3 |
| | BS1009 | Introduction to Computational Thinking | Core | 3 |
| | | | | Total AUs |

| | Course Code | Course Title | Type | AU |
|--------------------------------|------------------------|--|------|-----------|
| Year 1 Special Term | CY2003 | Research Attachment 3 (Making & Tinkering) | Core | 4 |
| | Overseas Learning Trip | | | |
| | | | | Total AUs |

| | Course Code | Course Title | Type | AU |
|------------------------------|-------------|-------------------------------|----------|-----------|
| Year 2 Semester 1 | CY2001 | Research Attachment 1 | Core | 4 |
| | CY0002 | Ethics | GER-Core | 3 |
| | BS0004 | Introduction to Data Science | GER-Core | 3 |
| | BS2001 | Physiology | Core | 3 |
| | BS2002 | Microbiology | Core | 3 |
| | BS2003 | Biochemistry II | Core | 3 |
| | ML0003 | Kickstart your Career Success | GER-Core | 1 |
| | | | | Total AUs |

| | Course Code | Course Title | Type | AU |
|----------------------|-------------|---|-----------|-----------|
| Year 2 Semester 2 | CY0001 | Writing Across the Disciplines | GER-Core | 3 |
| | BS1007 | Molecular and Cell Biology I | Core | 3 |
| | BS1100 | Molecular and Cell Biology Techniques Level 1 | Core | 3 |
| | BS0005 | One Health | GER-Core | 3 |
| | xxxxxx | School Major PE (choose from Table A) | Major PE | 3 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | GC0001 | Introduction to Sustainability: Multidisciplinary Approaches and Solutions | GER-Core | 1 |
| | | | Total AUs | 19 |

| | Course Code | Course Title | Type | AU |
|----------------------|-------------|---------------------------------------|-----------|-----------|
| Year 3 Semester 1 | CY0006 | Enterprise, Innovation and Leadership | GER-Core | 3 |
| | xxxxxx | School Major PE (choose from Table B) | Major PE | 3 |
| | xxxxxx | School Major PE (choose from Table B) | Major PE | 3 |
| | xxxxxx | School Major PE (choose from Table B) | Major PE | 3 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | | | Total AUs | 15 |

| | Course Code | Course Title | Type | AU |
|----------------------|-------------|---------------------------------------|-----------|-----------|
| Year 3 Semester 2 | xxxxxx | School Major PE (choose from Table A) | Major PE | 3 |
| | xxxxxx | School Major PE (choose from Table A) | Major PE | 3 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | | | Total AUs | 15 |

| | Course Code | Course Title | Type | AU |
|---|-------------|-----------------------------|------|-----------|
| Year 3 Special Term & Year 4 Semester 1 | CY4111 | Overseas Final Year Project | Core | 12 |
| | | | | Total AUs |

| | Course Code | Course Title | Type | AU |
|----------------------|-------------|---------------------------------------|--------------------|------------|
| Year 4 Semester 2 | xxxxxx | School Major PE (choose from Table A) | Major PE | 3 |
| | xxxxxx | School Major PE (choose from Table A) | Major PE | 3 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | xxxxxx | Unrestricted Elective / Second Major | UE | 3 |
| | | | Total AUs | 12 |
| | | | GRAND TOTAL | 138 |

BS-MPE (choose courses with a total of 24 AUs)

| Table A | | | |
|----------------|---|--------------------|-----------|
| Code | Title | Course Type | AU |
| BS2004 | Molecular & Cell Biology II | Major PE | 3 |
| BS2010 | Bioimaging | Major PE | 3 |
| BS2012 | Genetics & Genomics | Major PE | 3 |
| BS211S | Equations of Life | Major PE | 3 |
| BS2020 | Mathematics, Physics and Basic Programming for the Structural Biologist | Major PE | 3 |
| BS2021 | RNA Structures & RNA based Drug Development | Major PE | 3 |
| BS3335# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series I) – Protein behavior in health and disease – biophysical tools | Major PE | 3 |
| BS3347# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series I) – Metabolomics and Lipidomics | Major PE | 3 |
| BS3006 | Bioentrepreneurship | Major PE | 3 |
| BS3008 | Computational Biology & Modelling | Major PE | 3 |
| BS3012 | Functional genomics and proteomics | Major PE | 3 |
| BS3013 | Drug discovery & development, biotechnology | Major PE | 3 |
| BS3015 | The RNA World | Major PE | 3 |
| BS3017 | Advanced Microbial Pathogenesis | Major PE | 3 |
| BS3019 | Neuropsychology of Stress and Resilience | Major PE | 3 |
| BS3022 | Protein Trafficking | Major PE | 3 |
| BS3028 | Chemical Biology | Major PE | 3 |
| BS3332# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series I) – Methods in Histology | Major PE | 3 |
| BS3336# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series I) – Proteomics Workshop | Major PE | 3 |
| BS3339# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series I) – Neurobiology | Major PE | 3 |
| BS4018 | Biology of Aging and Neurodegeneration | Major PE | 3 |
| BS4205 | Good Manufacturing Practice and Sterilisation for Medical Devices | Major PE | 3 |
| BS3104 | Pathology | Major PE | 3 |
| AAB20D | Ecology | Major PE | 3 |
| HH3010 | Biotechnology and Society | Major PE | 3 |
| ES2303 | Introduction to Ecology | Major PE | 3 |
| ES4303 | Marine and Aquatic Ecology | Major PE | 3 |

| Table B | | | |
|----------------|---|--------------------|-----------|
| Code | Title | Course Type | AU |
| BS1101* | Basics of TCM (中医基础理论) | Major PE | 6 |
| BS2103* | TCM Diagnostics (中医诊断学) | Major PE | 6 |
| BS1200 | Understanding Singapore Healthcare System | Major PE | 3 |
| BS211S | Equations of Life | Major PE | 3 |
| BS2015 | Virology | Major PE | 3 |
| BS2100 | Molecular and Cell Biology Techniques Level 2 | Major PE | 3 |
| BS3001 | Neurobiology | Major PE | 3 |
| BS3003 | Developmental biology | Major PE | 3 |
| BS3004 | Cancer biology and Therapy | Major PE | 3 |
| BS3014 | Biological foundations of behavior | Major PE | 3 |
| BS3018 | Plant biology | Major PE | 3 |
| BS3021 | Bioimaging Techniques in EM | Major PE | 3 |
| BS3023 | Regulatory Control of Healthcare Products and Medical Devices | Major PE | 3 |

| | | | |
|----------|--|----------|---|
| BS3024 | Evolution in Health and Disease | Major PE | 3 |
| BS3027 | Spectroscopic Methods in Biomedical Structural Biology | Major PE | 3 |
| BS3032 | Environmental Microbiology | Major PE | 3 |
| BS3331# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series I) – Applied Immunology | Major PE | 3 |
| BS3338# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series II) – Effect of Anti-mitotic Drugs on Cancer Cells | Major PE | 3 |
| BS3340# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series II) – Science of aging and life extension in <i>C. elegans</i> | Major PE | 3 |
| BS3342# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series II) – Role of Actin cytoskeleton regulators in metastasis | Major PE | 3 |
| BS3344# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series II) – Macromolecular X-ray Crystallography | Major PE | 3 |
| BS3348# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series II) – Field Studies in Functional Plant Ecology | Major PE | 3 |
| BS3349# | Undergraduate Advanced Experimental Biology (UAEB) Workshop (Series II) – Introduction to R programming | Major PE | 3 |
| BS4002 | Current topics in cell biology | Major PE | 3 |
| BS4010 | Synthetic Biology | Major PE | 3 |
| BS4015 | Plant Biotechnology | Major PE | 3 |
| BS4016 | Advanced Virology | Major PE | 3 |
| BS4017 | High-Throughput Bioinformatics | Major PE | 3 |
| BS9001++ | Research Experience | Major PE | 3 |
| HH2016 | History of Animals | Major PE | 3 |
| ES3302 | Tropical Ecology | Major PE | 3 |
| BG4215 | Biomedical Nanotechnology | Major PE | 3 |
| CH4306 | Bioanalytical Techniques | Major PE | 3 |
| ES2304 | Microbes on natural ecosystems | Major PE | 3 |
| BS8004 | TCM: A Primer Course | GER-UE | 3 |

Note: BS students can only take it as UE (BMS students are barred).

*BS1101 and BS2103 are considered as ONE Major PE

Recommended Major PE which is conducted during 1-week term break, before the term or after the final examination