

Curriculum for students admitted from AY2025 onwards – Geosciences Specialisation

Curriculum for AY25 - Geosciences Specialisation		
EESS CORE		
Course Code	Course Title	AUs
ES0001	The Physical Environments of Singapore	3
ES0138	Introduction to Scientific Writing	2
ES1001	E2S2 Environment and Society	4
ES1003	E2S2 Solid Earth	4
ES1006	Introductory Field Experience	4
ES1007	Climate Change	3
ES2001	Computational Earth Systems Science	4
ES2003	E2S2 Biosphere	4
ES2802	GIS and the Earth System	3
MH1802	Calculus for the Sciences	4
GEOSCIENCES CORE		
ES2002	Earth Materials	3
ES2004	Sedimentary Geology	3
ES3002	Structural Geology and Tectonics	3
ES3003	Introduction to Geochemistry	3
ES3004	Introduction to Geophysics	3
ES3005	Advanced Field Course in Geology	5
MAJOR PE		
BS1001	Introductory Biology	3
BS1005	Biochemistry I	3
BS1008	Bioinformatics and Statistics	3
BS2002	Microbiology	3
CM1001	Foundations of Chemistry I	4
CM1002	Foundations of Chemistry II	4
CM2011	Analytical and Bioanalytical Chemistry	3
CV1011	Mechanics of Materials	4
CV1012	Fluid Mechanics	3
CV2014	Geotechnical Engineering	3
CV2016	Hydrology	3
ES2005	Geology of Earthquakes	3
ES2201	Law & Economics, Sustainable Development, and Environmental Protection	3
ES2203	Global Environmental Politics and Governance	3
ES2301	Principles of Heredity and Ecological Genetics	3
ES2303	Introduction to Ecology	3
ES2304	Microbes on Natural Ecosystems	3
ES2305	Introductory Statistics and Numerical Thinking	3
ES2801	Introduction to Natural Hazards	3

ES3006	Space Geodesy	3
ES3008	E2S2 Research	3
ES3101	Petroleum Geology	3
ES3102	Global Tectonics	3
ES3103	Sea-level Rise & Coastal Processes	2
ES3201	Coupled Human and Natural Systems	3
ES3202	Resilient Urban Systems	3
ES3301	Plant and Animal Physiology	3
ES3302	Tropical Ecology	3
ES3303	Environmental Biotechnology	3
ES3304	Advanced Placement in Ecology and Society	2
ES3305	Current Issues in Ecology	3
ES3306	Global Change Ecology	3
ES3307	Experimental Design & Analysis for Ecology	3
ES3801	Biogeochemistry	3
ES3802	The Urban Environment: Issues, assessment, and management	3
ES4002	Final Year Project	10
ES4004	Overseas Entrepreneurship Prog (12-month)	20
ES4006	Overseas Entrepreneurship Prog (6-month)	11
ES4010	Teaching in E2S2	4
ES4201	Environmental Management and Valuation	3
ES4301	Conservation Biology and Biodiversity	3
ES4302	Introduction to Earth Environmental Simulations	3
ES4303	Marine and Aquatic Ecology	4
ES4304	Eyes on Earth - Satellite Remote Sensing	3
ES4901	Oceanography	3
ES4902	Geophysical Data Analysis	3
ES4904	Volcanology	3
ES4905	Environmental Science and Policy	3
ES4906	Environmental Hydrology	3
ES4911	Seismology	3
MH2500	Probability and Introduction to Statistics	4
MH3511	Data Analysis with Computer	3
PH1104	Mechanics	3
PH1105	Optics, Vibrations and Waves	3
PH1106	Electricity and Magnetism	3
PH1107	Relativity and Quantum Physics	3
PH1801	Foundation of Physics I	3
PH1802	Foundation of Physics II	3

ICC Common Core			
Course Code	Course Title	AU	Schedule
CC0001	Inquiry & Communication in an Interdisciplinary World	2	Year 1 Sem 1
CC0003	Ethics & Civics in a Multicultural World	2	Year 1 Sem 1
CC0015	Health & Wellbeing	2	Year 1 Sem 2
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	2	Year 1 Sem 2
CC0006	Sustainability: Society, Economy & Environment	3	Year 1 Sem 2
CC0007	Science & Technology for Humanity	3	Year 2 Sem 1

Care, Serve, Learn (CSL) (3 AU)			
Course Code	Course Title	AU	Schedule
CSL	Care, Serve and Learn	3	Year 2 Sem 1

ICC Professional Series			
Course Code	Course Title	AU	Schedule
MLxxxx	Profession Preparation	1	Year 3 Sem 1
ES0002	Fundamentals of Data Science for Earth and Environmental Earth Systems Science	3	Year 3 Sem 2
ES0238	Scientific Writing for Non-Scientists	2	Year 3 Sem 2
ES4007	Professional Attachment	5	Year 3 ST

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	Major Requirements		Interdisciplinary Collaborative Core			Broadening & Deepening Electives	Total AU
	Core	Major PE	Common Core	Professional Series	Care, Serve, Learn		
1	21	7	11				39
2	20	10	3		3	3	39
3	9	9		11		9	38
4	5	3				11	19
Total	55	29	14	11	3	23	135

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES0138	Introduction to Scientific Writing	Core	2	
ES1001	E2S2 Environment and Society	Core	4	
MH1802	Calculus for the Sciences	Core	4	
CC0001	Inquiry and Communication in an Interdisciplinary World	ICC-CC	2	
CC0003	Ethics & Civics in a Multi-Cultural World	ICC-CC	2	
MPE	Major Prescribed Electives	MPE	3	for BS1001 (3AU)
MPE	Major Prescribed Electives	MPE	4	for CM101 (4AU)
			21	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES1003	E2S2 Solid Earth	Core	4	
ES1007	Climate Change	Core	3	ES1001
ES2003	E2S2 Biosphere	Core	4	
ML0004	Design Your Life & Career	ICC-CC	2	
CC0006	Sustainability: Human, Social, Economic & Environment	ICC-CC	3	
CC0015	Healthy Living & Mental Wellbeing	ICC-CC	2	
			18	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES1006	Introductory Field Experience	Core	4	Y1ST complete, Y2S1 register
ES2001	Computational Earth Systems Science	Core	4	MH1802
ES2802	GIS and the Earth System	Core	3	ES1003 & ES2001 (Co-req)
CC0007	Science & Technology for Humanity	ICC-CC	3	
CSL	Care, Serve and Learn	ICC-CSL	3	
MPE	Major Prescribed Electives	MPE	4	
			21	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES0001	The Physical Environments of Singapore	Core	3	
ES2002	Earth Materials	Core	3	ES1003
ES2004	Sedimentary Geology	Core	3	ES1003
MPE	Major Prescribed Electives	MPE	3	
MPE	Major Prescribed Electives	MPE	3	
BDE	Broadening and Deepening Elective	BDE	3	
			18	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES3003	Introduction to Geochemistry	Core	3	ES1003
MLxxx	Profession Preparation	ICC-PS	1	
MPE	Major Prescribed Electives	MPE	3	
MPE	Major Prescribed Electives	MPE	3	
MPE	Major Prescribed Electives	MPE	3	
BDE	Broadening and Deepening Elective	BDE	3	
			16	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES3002	Structural Geology and Tectonics	Core	3	ES1003
ES3004	Introduction to Geophysics	Core	3	ES1003
ES0002	Fundamentals of Data Science for Earth and Environmental Systems Science	ICC-PS	3	ES2001 & MH1802
ES0238	Scientific Writing for Non-Scientists	ICC-PS	2	ES0138
BDE	Broadening and Deepening Elective	BDE	3	
BDE	Broadening and Deepening Elective	BDE	3	
			17	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES4007	Professional Attachment	ICC-PS	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES3005*	Advanced Field Course in Geology	Core	5	ES2002 & ES2004 & ES2101 & ES3002
BDE	Broadening and Deepening Elective	BDE	3	
BDE	Broadening and Deepening Elective	BDE	3	
BDE	Broadening and Deepening Elective	BDE	3	
			14	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MPE	Major Prescribed Electives	MPE	3	
BDE	Broadening and Deepening Elective	BDE	2	
			5	