

Graduation Requirements for AY13/14 to AY14/15

Environmental Biology

Summary of Requirements	MCs
UNIVERSITY LEVEL REQUIREMENTS	20
Singapore Studies	1 module from the Singapore Studies list
General Education	Satisfied by: <ul style="list-style-type: none">• GE1101E/GEK1001 Geographical Journeys: Exploring World Environments• ENV1101 Environmental Studies: An Interdisciplinary Overview is cross-listed with GEM1903
Breadth Modules	Already fulfilled by modules outside the student's faculty within the programme
UNRESTRICTED ELECTIVES	39-40
PROGRAMME REQUIREMENTS	116-117
TOTAL	160

Environmental Geography

Summary of Requirements	MCs
UNIVERSITY LEVEL REQUIREMENTS	20
Singapore Studies	1 module from the Singapore Studies list
General Education	Satisfied by: <ul style="list-style-type: none">• GE1101E/GEK1001 Geographical Journeys: Exploring World Environments• ENV1101 Environmental Studies: An Interdisciplinary Overview is cross-listed with GEM1903
Breadth Modules	Already fulfilled by modules outside the student's faculty within the programme
UNRESTRICTED ELECTIVES	34-35
PROGRAMME REQUIREMENTS	121-122
TOTAL	160

Programme requirements for students in the Bachelor of Environmental Studies (For Cohort AY13/14 and AY14/15) (Environmental Biology specialization)

Level	Programme Requirements	Cumulative MCs
1000 (36 MCs)	CM1402 General Chemistry EC1301 Principles of Economics ENV1101 Environmental Studies: An Interdisciplinary Overview ESE1001/ESE1001FC Environmental Engineering Fundamentals GE1101E/GEK1001 Geographical Journeys: Exploring World Environments LSM1103 Biodiversity MA1312 Calculus with Applications ST1131 Introduction to Statistics (applicable from Cohort AY11/12 to Cohort AY13/14) ST1232 Statistics for Life Sciences (applicable from Cohort AY14/15 onwards) ENV1202 Communications for Environmental Studies	36
2000/ 3000 (24 MCs)	ENV2101 Global Environmental Change ENV2102 Environmental Law, Policy, Governance & Management ENV2103 Environmental and Public Health <u>Choose 3 modules from the following list:</u> ESE2401 Water Science & Technology GE2101 Methods and Practices in Geography GE2215 Introduction to GIS and Remote Sensing Methods GE2220 Terrestrial and Coastal Environment GE2221 Nature and Society GE2228 Weather and Climate GE2229 Water and the Environment GE2230 Energy Futures: Environment and Sustainability HY2235/GEK2008 Environmental History LSM2251 Ecology & Environment PH2216 Environmental Philosophy [^] PH2226 Concept of Nature in Inquiry [^] RE2103 Urban Planning SC2221 Environment & Society [^] Students have the choice to read both PH2216 and PH2226. However, only 4 MC can satisfy the programme requirements. The other 4 MC will count towards Unrestricted Electives.	60
3000 (24 MCs)	ENV3101 Environmental Challenges: Asian Case Studies I ENV3102 Environmental Challenges: Asian Case Studies II ENV3103 Environmental Economics & Policy	84

	<p>Choose any 3 of the following modules with not more than 1 module from List A:</p> <p>LSM3252 Evolution and Comparative Genomics</p> <p>LSM3253 Plant Physiology</p> <p>LSM3254 Ecology of Aquatic Environments</p> <p>LSM3255 Ecology of Terrestrial Environments</p> <p>LSM3256 Tropical Horticulture</p> <p>LSM3257 Quantitative Methods for Ecological Research</p> <p>LSM3261 Life Form and Function</p> <p>LSM3262 Environmental Animal Physiology</p> <p>LSM3263 Field Studies in Neotropical Ecosystems</p> <p>LSM3265 Entomology</p> <p>LSM3266 Avian Biology and Evolution</p> <p>LSM3267 Behavioural Biology</p> <p>LSM3272 Global Change Biology (module to be removed from BES curriculum from Semester 2, AY14/15 onwards)</p> <p>LSM3288/LSM3289 Advanced UROPS in Life Sciences I/II or</p> <p>ENV3202 Environmental Studies Internship Programme (4 MC)*</p> <p>List A modules[#]</p> <p>* Students have the choice to read both Internship and LSM3288. However, only 4 MC can satisfy the programme requirements. The other 4 MC will count towards Unrestricted Electives.</p>	
<p>4000 (32-33 MCs)</p>	<p>LSM4199 Honours Project (16 MC)</p> <p>ENV4101 Environmental Management in Singapore</p> <p>Choose any 3 of the following modules with not more than 1 module from List B:</p> <p>LSM4254 Principles of Taxonomy and Systematics</p> <p>LSM4255 Methods in Mathematical Biology</p> <p>LSM4257 Aquatic Vertebrate Diversity (new)</p> <p>LSM4261 Marine Biology</p> <p>LSM4262 Tropical Conservation Biology</p> <p>LSM4263 Field Studies in Biodiversity</p> <p>LSM4264 Freshwater Biology</p> <p>LSM4265 Urban Ecology</p> <p>LSM4267 Animal Communications & Sensory Ecology</p> <p>List B modules[#]</p>	<p>116-117</p>

# List A:	# List B:
GE3210 Natural Resources: Policy and Practice	GE4207 Coastal Management (5 MC)
GE3216 Applications of GIS and Remote Sensing	GE4211 Advanced Hydrology and Water Resources Management (5 MC)
GE3221 Ecological Systems	GE4212 Environmental Modelling (5 MC)
GE3223 Environmental Changes in the Tropics	GE4214 Remote Sensing of Environment (5 MC)
GE3227 Urban Climates	GE4219 Development and Environment in Southeast Asia (5 MC)
GE3231 Natural Hazards	GE4220 Field Investigation in Physical Geography (5 MC)
GE3233 Environmental Research Methods	GE4222 Advanced Geomorphology (5 MC)
GE3238 GIS Design and Practices	GE4223 Development of Geographical Thought (5 MC)
GE3239 Environmental Sustainability	GE4224 Applied Biogeography (5 MC)
GE3242 Sediments and Sedimentary Basins	GE4227 Climate Change: Processes, Impact and Responses (5 MC)
GE3243 Applied Petroleum Exploration	GE4229 Earth Systems Science (5 MC)
GE3244 Fundamentals of Petroleum Exploration	GE4880 Topics in Geography (5 MC)
GE3246 Environmental Pollution	CE4231 Earth's Climate: Science & Modelling
EC3384 Resource and Energy Economics I	ESE4301 Wastewater Biotechnology
XD3103 Planet Earth	ESE4401 Water & Wastewater Engineering 2
ESE3101 Solid and Hazardous Waste Management	ESE4402 Treatment Plant Hydraulics
ESE3201 Air Quality Management	
ESE3301 Environmental Microbiological Principles	
ESE3401 Waste and Wastewater Engineering 1	
PF3302 Energy Management	
AR2723 Strategies for Sustainable Architecture	

Programme requirements for students in the Bachelor of Environmental Studies (For Cohort AY13/14 and AY14/15) (Environmental Geography specialization)

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1000 (36 MCs)	CM1402 General Chemistry EC1301 Principles of Economics ENV1101 Environmental Studies: An Interdisciplinary Overview ESE1001/ESE1001FC Environmental Engineering Fundamentals GE1101E/GEK1001 Geographical Journeys: Exploring World Environments LSM1103 Biodiversity MA1312 Calculus with Applications ST1131 Introduction to Statistics (applicable from Cohort AY11/12 to Cohort AY13/14) ST1232 Statistics for Life Sciences (applicable from Cohort AY14/15 onwards) ENV1202 Communications for Environmental Studies	36
2000/ 3000 (24 MCs)	ENV2101 Global Environmental Change ENV2102 Environmental Law, Policy, Governance & Management ENV2103 Environmental and Public Health <u>Choose 3 modules from the following list:</u> ESE2401 Water Science & Technology GE2101 Methods and Practices in Geography GE2215 Introduction to GIS and Remote Sensing Methods GE2220 Terrestrial and Coastal Environment GE2221 Nature and Society GE2228 Weather and Climate GE2229 Water and the Environment GE2230 Energy Futures: Environment and Sustainability HY2235/GEK2008 Environmental History LSM2251 Ecology & Environment PH2216 Environmental Philosophy ^ PH2226 Concept of Nature in Inquiry ^ RE2103 Urban Planning SC2221 Environment & Society ^ Students have the choice to read both PH2216 and PH2226. However, only 4 MC can satisfy the programme requirements. The other 4 MC will count towards Unrestricted Electives.	60
3000	ENV3101 Environmental Challenges: Asian Case Studies I	88

(28 MCs)	<p>ENV3102 Environmental Challenges: Asian Case Studies II ENV3103 Environmental Economics & Policy GE3240 Geographical Research: Developing Ideas</p> <p><u>Choose any 3 of the following modules with not more than 1 module from List C:</u></p> <p>GE3210 Natural Resources: Policy and Practice GE3216 Applications of GIS and Remote Sensing GE3221 Ecological Systems GE3223 Environmental Changes in the Tropics GE3227 Urban Climates GE3230A Field Studies in Geography: Southeast Asia (8 MC)[†] GE3231 Natural Hazards GE3233 Environmental Research Methods GE3238 GIS Design and Practices GE3239 Environmental Sustainability GE3242 Sediments and Sedimentary Basins GE3243 Applied Petroleum Exploration GE3244 Fundamentals of Petroleum Exploration GE3246 Environmental Pollution EC3384 Resource and Energy Economics I XD3103 Planet Earth GE3551 FASS UROP <u>or</u> ENV3202 Environmental Studies Internship Programme (4 MC) *</p> <p>List C modules[#]</p> <p>[†] If students read GE3230A, they will be deemed to have fulfilled 2 out of the 3 modules. * Students have the choice to read both Internship and GE3551. However, only 4 MC can satisfy the programme requirements. The other 4 MC will count towards Unrestricted Electives.</p>	
4000 (33-34 MCs)	<p>GE4401 Honours Thesis (15 MC) ENV4101 Environmental Management in Singapore</p> <p><u>Choose any 3 of the following modules with not more than 1 module from List D:</u></p> <p>GE4207 Coastal Management (5 MC) GE4211 Advanced Hydrology and Water Resources Management (5 MC) GE4212 Environmental Modelling (5 MC) GE4214 Remote Sensing of Environment (5 MC) GE4219 Development and Environment in Southeast Asia (5 MC) GE4220 Field Investigation in Physical Geography (5 MC) GE4222 Advanced Geomorphology (5 MC) GE4223 Development of Geographical Thought (5 MC) GE4224 Applied Biogeography (5 MC) GE4227 Climate Change: Processes, Impact and Responses (5 MC) GE4229 Earth Systems Science (5 MC) GE4880 Topics in Geography (5 MC)</p>	121-122

List C:

LSM3252 Evolution and Comparative Genomics
 LSM3253 Plant Physiology
 LSM3254 Ecology of Aquatic Environments
 LSM3255 Ecology of Terrestrial Environments
 LSM3256 Tropical Horticulture
 LSM3257 Quantitative Methods for Ecological Research
 LSM3261 Life Form and Function
 LSM3262 Environmental Animal Physiology
 LSM3263 Field Studies in Neotropical Ecosystems
 LSM3265 Entomology
 LSM3266 Avian Biology and Evolution
 LSM3267 Behavioural Biology
 LSM3272 Global Change Biology (module to be removed
 from BES curriculum from Semester 2, AY14/15 onwards)
 ESE3101 Solid and Hazardous Waste Management
 ESE3201 Air Quality Management
 ESE3301 Environmental Microbiological Principles
 ESE3401 Waste and Wastewater Engineering 1
 PF3302 Energy Management
 AR2723 Strategies for Sustainable Architecture

List D:

LSM4254 Principles of Taxonomy and Systematics
 LSM4255 Methods in Mathematical Biology
LSM4257 Aquatic Vertebrate Diversity (new)
 LSM4261 Marine Biology
 LSM4262 Tropical Conservation Biology
 LSM4263 Field Studies in Biodiversity
 LSM4264 Freshwater Biology
 LSM4265 Urban Ecology
 LSM4267 Animal Communications & Sensory
 Ecology
 CE4231 Earth's Climate: Science & Modelling
 ESE4301 Wastewater Biotechnology
 ESE4401 Water & Wastewater Engineering 2
 ESE4402 Treatment Plant Hydraulics