

THE UNIVERSITY OF HONG KONG

FACULTY OF SCIENCE

Programme Learning Outcomes – Major in Earth System Science

1. University Educational Aims

Benchmarked against the highest international standards, the 4-year undergraduate curriculum at HKU is designed to enable our students to develop their capabilities in:

- (1) pursuit of academic/professional excellence, critical intellectual enquiry and life-long learning
- (2) tackling novel situations and ill-defined problems
- (3) critical self-reflection, greater understanding of others, and upholding personal and professional ethics
- (4) intercultural communication, and global citizenship
- (5) communication and collaboration
- (6) leadership and advocacy for the improvement of the human condition

2. Faculty Learning Outcomes

Students completing the BSc curriculum should be able to:

- (1) explain the basic scientific principles and methods
- (2) comprehend fundamental concepts in mathematics and the physical, chemical, biological and earth sciences, and understand the interconnectivity among the sciences and other disciplines
- (3) apply scientific processes and knowledge in a wide variety of careers and professions
- (4) effectively communicate within and across the science disciplines
- (5) analyze scientific aspects of complex issues, and recognize and appraise moral and ethical issues within the sciences and related disciplines
- (6) integrate acquired discipline-specific knowledge in a science for professional and further academic pursuit in that discipline

3. Programme Learning Outcomes – Major in Earth System Science

By the end of this programme, students should be able to:

- (1) describe the key concepts of the Earth System components and processes
(by means of coursework, tutorial classes and laboratory-based learning in the curriculum)
- (2) have acquired the ability to observe, describe, measure and analyze principal phenomena of earth processes and the interactions between different earth components
(by means of coursework, tutorial classes and laboratory-based learning in the curriculum)
- (3) provide expertise to maintain geological environments and prevent severe perturbations due to resource exploitation and water disposal
(by means of coursework, tutorial classes and laboratory-based learning in the curriculum)
- (4) equip with the knowledge and skills to better predict and deal with geological and related hazards such as earthquakes, landslides, tsunamis, floods and volcanic eruptions, and recognize and appraise the related ethical issues
(by means of coursework, tutorial classes and laboratory-based learning in the curriculum)
- (5) identify real life problems pertaining to the physical environment and find solutions to those problems
(by means capstone learning experience in the form of internship, field learning, and project-based learning in the curriculum)
- (6) work with other students and possess an adequate level of communication skills
(by means of group project learning and presentation opportunities in the curriculum)

4. Mapping of Programme Learning Outcomes to Faculty Learning Outcomes to University Educational Aims

Due to the richness and diversity of the Major, multiple Programme and/or Faculty Learning Outcomes may be used to satisfy the Faculty Learning Outcomes and/or University Educational Aims.

Programme Learning Outcomes – Major in Earth System Science	Faculty Learning Outcomes – BSc programme	University Educational Aims
By the end of this programme, students should be able to:	Students completing the BSc curriculum should be able to:	Benchmarked against the highest international standards, the 4-year undergraduate curriculum at HKU is designed to enable our students to develop their capabilities in:
<ul style="list-style-type: none"> (1) describe the key concepts of the Earth System components and processes (2) have acquired the ability to observe, describe, measure and analyze principal phenomena of earth processes and the interactions between different earth components (3) provide expertise to maintain geological environments and prevent severe perturbations due to resource exploitation and water disposal (4) equip with the knowledge and skills to better predict and deal with geological and related hazards such as earthquakes, landslides, tsunamis, floods and volcanic eruptions, and recognize and appraise the related ethical issues (5) identify real life problems pertaining to the physical environment and find solutions to those problems 	<ul style="list-style-type: none"> (1) explain the basic scientific principles and methods (2) comprehend fundamental concepts in mathematics and the physical, chemical, biological and earth sciences, and understand the interconnectivity among the sciences and other disciplines (3) apply scientific processes and knowledge in a wide variety of careers and professions (5) analyze scientific aspects of complex issues, and recognize and appraise moral and ethical issues within the sciences and related disciplines (6) integrate acquired discipline-specific knowledge in a science for professional and further academic pursuit in that discipline 	<ul style="list-style-type: none"> (1) pursuit of academic/professional excellence, critical intellectual enquiry and life-long learning
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(6) work with other students and possess an adequate level of communication skills	(4) effectively communicate within and across the science disciplines (5) analyze scientific aspects of complex issues, and recognize and appraise moral and ethical issues within the sciences and related disciplines	(4) intercultural communication, and global citizenship
(6) work with other students and possess an adequate level of communication skills	(4) effectively communicate within and across the science disciplines	(5) communication and collaboration
(3) provide expertise to maintain geological environments and prevent severe perturbations due to resource exploitation and water disposal (4) equip with the knowledge and skills to better predict and deal with geological and related hazards such as earthquakes, landslides, tsunamis, floods and volcanic eruptions, and recognize and appraise the related ethical issues (5) identify real life problems pertaining to the physical environment and find solutions to those problems	(3) apply scientific processes and knowledge in a wide variety of careers and professions	(6) leadership and advocacy for the improvement of the human condition