

Programme Learning Outcomes – Major in Statistics

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 Statistics

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

- (1) receive solid training in probability and statistics, gain insight into their underlying theory and be acquainted with their state-of-the-art applications in the modern world
(by means of coursework, tutorial classes and/or project-based learning in the curriculum)
- (2) conduct meticulous data analyses, supported by rigorous statistical reasoning, to make informed decisions in the face of uncertainty that arises in all sorts of institutions and companies, and appraise the related ethical issues
(by means of coursework, tutorial classes and/or project-based learning in the curriculum)
- (3) equip with hands-on experience in data analysis using statistical software, and be competent for data-analytic jobs which require advanced computational skills
(by means of coursework, tutorial classes and/or project-based learning in the curriculum)
- (4) be highly motivated to explore cross-disciplinary applications of statistics in a broad variety of academic or professional areas including, in particular, mathematics, natural sciences, economics, finance, business, risk management, actuarial work, social sciences and engineering
(by means of coursework, tutorial classes and/or project-based learning in the curriculum)
- (5) communicate and collaborate with people effectively on probability and statistical issues
(by means of coursework, tutorial classes, project-based and/or capstone learning in the curriculum)
- (6) through the understanding and application of statistical concepts and techniques, gain confidence to meet challenges posed by increasingly complicated real-life problems encountered in the modern era in a creative and rational manner
(by means of coursework, tutorial classes, project-based and/or capstone learning 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 Statistics | 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) receive solid training in probability and statistics, gain insight into their underlying theory and be acquainted with their state-of-the-art applications in the modern world (2) conduct meticulous data analyses, supported by rigorous statistical reasoning, to make informed decisions in the face of uncertainty that arises in all sorts of institutions and companies, and appraise the related ethical issues (3) equip with hands-on experience in data analysis using statistical software, and be competent for data-analytic jobs which require advanced computational skills (4) be highly motivated to explore cross-disciplinary applications of statistics in a broad variety of academic or professional areas including, in particular, mathematics, natural sciences, economics, finance, business, risk management, actuarial work, social sciences and engineering | <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 |
| <ul style="list-style-type: none"> (2) conduct meticulous data analyses, supported by rigorous statistical reasoning, to make informed decisions in the face of uncertainty that arises in all sorts of institutions and companies, and appraise the related ethical issues (3) equip with hands-on experience in data analysis using statistical software, and be competent for data-analytic jobs which require advanced computational skills (4) be highly motivated to explore cross-disciplinary applications of statistics in a broad variety of academic or professional areas including, in particular, mathematics, natural sciences, economics, finance, business, risk management, actuarial work, social sciences and engineering (6) through the understanding and application of statistical concepts and techniques, gain confidence to meet challenges posed by increasingly complicated real-life problems encountered in the modern era in a creative and rational manner | <ul style="list-style-type: none"> (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 | <ul style="list-style-type: none"> (2) tackling novel situations and ill-defined problems |

| Programme Learning Outcomes – Major in Statistics | 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: |
| (2) conduct meticulous data analyses, supported by rigorous statistical reasoning, to make informed decisions in the face of uncertainty that arises in all sorts of institutions and companies, and appraise the related ethical issues | (5) analyze scientific aspects of complex issues, and recognize and appraise moral and ethical issues within the sciences and related disciplines | (3) critical self-reflection, greater understanding of others, and upholding personal and professional ethics |
| <p>(1) receive solid training in probability and statistics, gain insight into their underlying theory and be acquainted with their state-of-the-art applications in the modern world</p> <p>(2) conduct meticulous data analyses, supported by rigorous statistical reasoning, to make informed decisions in the face of uncertainty that arises in all sorts of institutions and companies, and appraise the related ethical issues</p> <p>(4) be highly motivated to explore cross-disciplinary applications of statistics in a broad variety of academic or professional areas including, in particular, mathematics, natural sciences, economics, finance, business, risk management, actuarial work, social sciences and engineering</p> <p>(5) communicate and collaborate with people effectively on probability and statistical issues</p> <p>(6) through the understanding and application of statistical concepts and techniques, gain confidence to meet challenges posed by increasingly complicated real-life problems encountered in the modern era in a creative and rational manner</p> | <p>(4) effectively communicate within and across the science disciplines</p> <p>(5) analyze scientific aspects of complex issues, and recognize and appraise moral and ethical issues within the sciences and related disciplines</p> | (4) intercultural communication, and global citizenship |
| (5) communicate and collaborate with people effectively on probability and statistical issues | (4) effectively communicate within and across the science disciplines | (5) communication and collaboration |
| <p>(4) be highly motivated to explore cross-disciplinary applications of statistics in a broad variety of academic or professional areas including, in particular, mathematics, natural sciences, economics, finance, business, risk management, actuarial work, social sciences and engineering</p> <p>(6) through the understanding and application of statistical concepts and techniques, gain confidence to meet challenges posed by increasingly complicated real-life problems encountered in the modern era in a creative and rational manner</p> | (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 |