

Requirements for Major in Statistics

Applicable to cohorts AY2021/2022 and after

| Levels | Major Requirements | Cumulative Major Units |
|--------------------------|--|------------------------|
| Level 1000 (4 Units) | Pass - ST1131 Introduction to Statistics and Statistical Computing ¹ | 4 |
| Level 2000 (24 Units) | Pass - ST2131/MA2116/MA2216 Probability - ST2132 Mathematical Statistics - ST2137 Computer Aided Data Analysis/Statistical Computing and Programming - MA2001 Linear Algebra I - MA2002 Calculus - MA2311 Techniques in Advanced Calculus or MA2104 Multivariable Calculus | 28 |
| Level 3000 (16 Units) | Pass - ST3131 Regression Analysis - Three courses from ST32xx (except ST328*) or ST42xx (except ST4288) courses | 44 |
| Level 4000 (16 Units) | Choose either Option A or Option B <u>Option A</u> - Four courses from ST42xx (except ST4288) <u>Option B</u> - Two courses from ST42xx - ST4288 Honours Project in Statistics | 60 |

¹ ST1131 will be read in fulfilment of the Data Literacy requirement under the College of Humanities and Sciences.

* UOPS courses ST3288 and ST3289 do not count towards the Major and fulfill as Unrestricted Elective courses.

To graduate with a Major in Statistics, student must have read and passed at least one of the following:

- (1) ST3288 / ST3288R
- (2) ST4288
- (3) Any UPIP/FASSIP course
- (4) Any NOC Internship course

Students majoring in Statistics have the option to pursue specialisations in

(A) **Data Science** or/and (B) **Finance and Business Statistics**.

(A) To be awarded a specialisation in **Data Science**, pass (at least) 20 Units from the following two lists, with at least 8 Units from list DS 1.

DS 1

ST3248 Statistical Learning I
CS3243 Introduction to Artificial Intelligence^
CS3244 Machine Learning^
ST4248 Statistical Learning II
ST4250 Multivariate Statistical Analysis

DS 2

ST3247 Simulation
CS3210 Parallel Computing^
MA3252 Linear Network Optimisation
ST4234 Bayesian Statistics
CS4231 Parallel and Distributed Algorithms^
DSA4211 High-Dimensional Statistical Analysis
DSA4212 Optimisation for Large-Scale Data-Drive Inference
MA4268 Mathematics for Visual Data Processing^
DSE4211 / QF4211 Digital Currencies^
DSE4212 / QF4212 Data Science in FinTech^

(B) To be awarded a specialisation in **Finance and Business Statistics**, pass (at least) 20 Units from the following two lists, with at least 8 Units from each list (FBS 1, FBS 2):

FBS 1

ST3234 Actuarial Statistic
ST3246 Statistical Models for Actuarial Science
ST4245 Statistical Methods for Finance
ST4253 Applied Time Series Analysis
QF4103 Mathematical Models of Financial Derivatives^
DSE4211 / QF4211 Digital Currencies^
DSE4212 / QF4212 Data Science in FinTech^

FBS 2

ST3232 Design and Analysis of Experiments
ST3236 Stochastic Processes I
ST3239 Survey Methodology
ST3244 Demographic Methods
ST4238 Stochastic Processes II
ST4252 Applied Survival Analysis

^ Students who wish to read these courses would have to read additional pre-requisite courses and should consult the Faculty/Department for academic advice on their study plans.

Sample Study Plan — Statistics

| Year 1 | | Year 2 | | Year 3 | | Year 4 | |
|---|---|---|---|---------------------|----------------------|----------|----------|
| Sem 1 | Sem 2 | Sem 1 | Sem 2 | Sem 1 | Sem 2 | Sem 1 | Sem 2 |
| Pair 1: Humanities Pair 2: Social Sciences | Pair 1: Social Sciences Pair 2: Humanities | Writing | Communities and Engagement | Interdisciplinary I | Interdisciplinary II | Major 13 | Major 15 |
| Pair 1: Asian Studies Pair 2: Scientific Inquiry I | Pair 1: Scientific Inquiry I Pair 2: Asian Studies | Scientific Inquiry II | Artificial Intelligence | Major 9 | Major 11 | Major 14 | UE 10 |
| Digital Literacy (CS1010S) | Design Thinking | MA2311 Techniques in Advanced Calculus/ MA2104 <u>or</u> ST2137 | ST2137 Statistical Computing and Programming <u>or</u> MA2104 Multivariable Calculus | Major 10 | Major 12 | UE 7 | UE 11 |
| ST1131* Introduction to Statistics and Statistical Computing | MA2001 Linear Algebra I | ST2132 Mathematical Statistics <u>or</u> ST3131 | ST3131 Regression Analysis <u>or</u> ST2132 | UE 3 | UE 5 | UE 8 | UE 12 |
| MA2002 Calculus | ST2131 Probability | UE 1 | UE 2 | UE 4 | UE 6 | UE 9 | UE 13 |

* ST1131 fulfils the Data Literacy requirement.

Note on CHS Common Curriculum courses:

1) Students are strongly encouraged to complete all CHS Common Curriculum courses in their first two years except for the following 3 courses:

- Communities and Engagement course – can be taken from Years 2 to 4*
- Two Interdisciplinary courses – can be taken in Years 3 and 4*

2) The actual pre-allocation may differ from the sample study plan. For the actual pre-allocation pairings, please click [here](#).