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.

* UROPS 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^
DSA4213 Natural Language Processing for Data Science

ST4248 Statistical Learning II
ST4250 Multivariate Statistical Analysis

DS 2
ST3247 Simulation
CS3210 Parallel Computing^
MA3252 Linear Network Optimsation
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 Stoahastic 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: Scientific Inquiry I Pair 2: Asian Studies	Pair 1: Asian Studies Pair 2: Scientific Inquiry I	Scientific Inquiry II	Artificial Intelligence	Major 9	Major 11	Major 14	UE 10
Pair 2: Design Thinking	Pair 1: Design Thinking	MA2311 Techniques in Advanced Calculus/ MA2104 Multivariable Calculus	ST2137 Statistical Computing and Programming	Major 10	Major 12	UE 7	UE 11
ST1131* Introduction to Statistics and Statistical Computing	MA2001 Linear Algebra I	ST2132 Mathematical Statistics or ST3131	ST3131 Regression Analysis or 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*

***Important note on workload: Semester vs. Year-long C&E courses*

- *Some C&E courses, usually the field/project-work courses, are regular intense 4-Unit courses with work completed within one semester.*
- *Other C&E courses, especially the service-work courses, are spread out over two consecutive semesters, or up to one year, that is,* ***Semester 1 through Semester 2 to Special Term 2****; or* ***Semester 2 through the Special Terms to Semester 1 of following Academic Year (AY)****. You may click* ***here*** *for more details on the service-work courses.*
- *For those students who read the year-long C&E courses which extend till Special Term (during the summer break) after their 8th semester, please note that grades are awarded at the end of Special Term 2, which means your degree will be conferred in end-Aug, and you will join the Commencement ceremony in the following year instead of the same AY of completion of the course. For more details, please check out the FAQ* ***here****.*
- *As such, students who prefer to take such year-long C&E courses instead of semester-long courses (where the latter might have limited capacity in each semester) are encouraged to plan in advance. You may do so by including the C&E course in your study plan earlier in your candidature; for example, during Year 2 of study.*
- *This would allow students to plan for other enrichment programmes (such as Student Exchange programmes, NOC and/or UPIP/Internships) during Year 3 instead of delaying this requirement to Year 4 when students will need to devote time for their job search in the final semester as they complete the remaining graduation requirements.*
- *For more enquiries, please check out the* ***FAQ****, or email the C&E team at* ***AskCnE@nus.edu.sg****.*

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