YaleNUSCollege

Mathematical, Computational & Statistical Sciences

Three Year Course List

The purpose of this document is to help you visualise what course offerings will be in different Majors during the final three years of the college. Heads of Study have worked conscientiously, in consultation with Faculty, to map out for you the courses, both core and elective, that will be offered in each year, taking into the account the gradual reduction of Yale-NUS students and Faculty transitional plans.

While the overall shape of the Major will be as it is set out here, <u>individual course offerings are subject to change</u>. As with any forward projection, things become more tentative as one moves further into the future. Any changes to the course offerings will be communicated to you in a timely fashion, by means of a revised version of this document. In the meantime, the general advice – as valuable now as it has always been! – is to sign up for desired courses at the earliest possible opportunity to avoid disappointment.

In some cases, a course has a generic placeholder name. This means that we are in the process of hiring a Faculty member who will teach in this area; the specific name and nature of the course will depend on the successful candidate's expertise, and will be announced to you in due course.

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AY2022/2023	
Semester 1	**Semester 2**
YSC1212 Introduction to Computer Science	YSC1212 Introduction to Computer Science
YSC1216 Calculus	YSC1216 Calculus
YSC2239 Introduction to Data Science	YSC2209 Proof
YSC2232 Linear Algebra	YSC2232 Linear Algebra
YSC2243 Probability	YSC2239 Introduction to Data Science
YSC2209 Proof x 2	YSC2210 Data Analysis and Visualization (DAVis)with R
YSC2229 Introductory Data Structures and Algorithms	YSC2254 Modelling and Optimization
YSC2244 Programming for Data Science	YSC2227 C: A Language for Science and Engineering (2.5MCs)
YSC2252 Multivariable Calculus	YSC2221 Introduction to Python (2.5MCs) x2
YSC2227 C: A Language for Science and Engineering (2.5MCs)	YSC3249 Statistical Inference
YSC2221 Introduction to Python (2.5MCs) x2	YSC3208 Programming Language Design and Implementation
YSC3237 Introduction to Modern Algebra	YSC3232 Software Engineering
YSC3206 Introduction to Real Analysis	YSC3217 Programming Operating Systems, Interfaces & eXtras
YSC3236 Functional Programming and Proving	YSC3239 Geometry and the Emergence of Perspective (HI)
	YSC3203 Advanced Algorithms and Data Structures
YSC3252 Statistical Computing	YSC4206 Mathematical Signal Processing
YSC4220 Ordinary and Partial Differential Equations	YSC4216 Machine Learning
YSC4231 Parallel, Concurrent and Distributed Programming	YSC4224 Applied Data Science
YSC4225 Stochastic Processes and Models (SPaM)	YSC4228 Data Science in Quantitative Finance (2.5MC)
YSCxxx AI Projects and Case Studies	YSC4103 Maths, Computational & Statistical Sci Capstone Project
YSC4103 Maths, Computational & Statistical Sci Capstone Project	
20 courses	**19 courses + 1 HI**

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AY2023/2024	
Semester 1	**Semester 2**
YSC1212 Introduction to Computer Science	YSC1212 Introduction to Computer Science
YSC1216 Calculus	YSC2239 Introduction to Data Science
YSC2239 Introduction to Data Science	YSC3232 Software Engineering
YSC2232 Linear Algebra	YSC2209 Proof
YSC2209 Proof	YSC2252 Multivariable Calculus
YSC2229 Introductory Data Structures and Algorithms	YSC2254 Modelling and Optimization
YSC2243 Probability	YSC2221 Introduction to Python (2.5MCs) x2
YSC2244 Programming for Data Science	YSC3249 Statistical Inference
YSC2227 C: A Language for Science and Engineering (2.5MCs) - service module	YSC3208 Programming Language Design and Implementation
YSC2221 Introduction to Python (2.5MCs) x2	YSC3217 Programming Operating Systems, Interfaces & eXtras
YSC3237 Introduction to Modern Algebra	YSC3239 Geometry and the Emergence of Perspective
YSC3236 Functional Programming and Proving	YSC3203 Advanced Algorithms and Data Structures
YSC3252 Statistical Computing	YSC4206 Mathematical Signal Processing
YSC3206 Introduction to Real Analysis	YSC4216 Machine Learning
YSC4103 Maths, Computational & Statistical Sci Capstone Project	YSC4224 Applied Data Science
YSC4220 Ordinary and Partial Differential Equations	YSC4103 Maths, Computational & Statistical Sci Capstone Project
YSC4225 Stochastic Processes and Models (SPaM)	
YSCxxx AI Projects and Case Studies	
18 courses	**16 courses**

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AY2024/2025	
Semester 1	**Semester 2**
YSC1212 Introduction to Computer Science	YSC1212 Introduction to Computer Science
YSC2239 Introduction to Data Science	YSC2239 Introduction to Data Science
YSC2232 Linear Algebra	YSC2209 Proof
YSC2229 Introductory Data Structures and Algorithms	YSC2252 Multivariable Calculus
YSC2209 Proof	YSC2254 Modelling and Optimization
YSC2243 Probability	YSC2221 Introduction to Python (2.5MCs) x2
	YSC3232 Software Engineering
YSC2244 Programming for Data Science	YSC3249 Statistical Inference
YSC2227 C: A Language for Science and Engineering (2.5MCs)	YSC3208 Programming Language Design and Implementation
YSC2221 Introduction to Python (2.5MCs) x2	YSC3217 Programming Operating Systems, Interfaces & eXtras
YSC3206 Introduction to Real Analysis	YSC3239 Geometry and the Emergence of Perspective
YSC3237 Introduction to Modern Algebra	YSC3203 Advanced Algorithms and Data Structures
YSC3236 Functional Programming and Proving	YSC4206 Mathematical Signal Processing
YSC3252 Statistical Computing	YSC4216 Machine Learning
YSC4103 Maths, Computational & Statistical Sci Capstone Project	YSC4224 Applied Data Science
YSC4220 Ordinary and Partial Differential Equations	YSC4103 Maths, Computational & Statistical Sci Capstone Project
YSC4225 Stochastic Processes and Models (SPaM)	
YSCxxx AI Projects and Case Studies	
17 courses	**16 courses**