

Curriculum

I Foundation Programme

12 Credits



All students entering the undergraduate programme complete our common core, The Foundation Programme, in the first year. The Foundation Programme is designed around four Studios, each of three credits. They are:

Democracy and Justice

Environment and Climate Change

Neighbourhoods

Water

The studios deliver interdisciplinary learning around six domains:

Data Science, Communication, Behaviour, Constitution & Civilisation, Materials, and Biology & Life.

II General Education Requirement

30 Credits



Humanities & Languages GER

Social Sciences GER

Biological & Life Sciences GER

Mathematical & Physical Sciences GER

Performance & Visual Arts GER

GER Elective 1: Effective Reading and Comprehension Skills

GER Elective 2: Advanced Writing

GER Elective 3: Introduction to Numerical Analysis

GER Elective 4: Any course at the university outside the major

GER Elective 5: Any course at the university outside the major

Major Requirements	Credits
<i>Major Core</i>	45
Classical Mechanics	3
Intermediate Classical Mechanics	3
Laboratory Physics - Mechanics	3
Laboratory Physics - Electromagnetism	3
Electromagnetic Theory	3
Oscillations, Waves and Optics	3
Quantum Mechanics I	3
Solid State Physics	3
Thermodynamics	3
Electrical Circuits and Electronics	3
Atomic and Nuclear Physics	3
Multivariable Calculus	3
Applied Linear Algebra	3
Differential Equations	3
Laboratory Physics - Optics	1.5
Laboratory Physics - Electronics	1.5
<i>Major Electives</i>	3



Free Electives provide flexibility to students to customise their education at the University.

1. Free Electives allow you to take additional courses as per your choice (apart from the Foundation Programme, GERs and Major Requirements), upto 18 credits, across the university to increase your depth or breadth.
2. A student can take a Minor in any area designated as a Minor at any School or Centre of the University. Some Minors may have specific pre-requisites. Free Electives can also be used along with some courses from the Major Requirements and GERs towards a Minor.



All students will complete 30 hours of engagement with society to develop a sense of engagement, concern, build problem solving skills, and understand the role of an engaged member of a society. This will be done through a mandatory course, *Engagement with Society*, that would be a graduation requirement. This course can be taken anytime during the stay at the University but it is advised that the student engage with the courses during the first two years at the University. The 30 hours of volunteer work may be completed during one semester or during the Winter or Summer Break.

MS in Quantitative Finance

I Quantitative Finance Courses

72 Credits



	Credits
Foundation Module	Required
Modelling for Managerial Decisions	
Programming using R and Python	
Programme Core	25.5
Microeconomics I	3
Microeconomics II	3
Macroeconomics I	3
Macroeconomics II	3
Foundation of Finance and Financial Markets	3
Econometrics	3
Security Analysis and Portfolio Management	3
Corporate Finance	1.5
Applications of Machine Learning	3
Disciplinary Core	22.5
Financial Derivatives	3
Risk Management	3
Mergers, Acquisitions & Private Equity	3
Financial Time Series Analysis	3
Fixed Income Securities and its Derivatives	3
Asset Pricing	3
Research in Quantitative Finance	3
Technical Analysis	1.5
Disciplinary Electives	15
Summer Internship	3
Thesis/Capstone	6