



# UNIVERSITY FOUNDATION PROGRAM

## MATHEMATICS

### SUBJECT OVERVIEW

For 35 years CATS UFP has provided a high quality, successful qualification. Through consistent improvement using teacher and student feedback, classroom experience and by working closely with universities the Mathematics UFP course is designed to engage international students through topics and issues that are relevant across the globe. In addition to learning standard mathematical formulae and techniques, students will develop their critical thinking skills, logic and reasoning ability through the various problem-solving elements of the course. These skills are highly desirable in higher education and valued by employers. The experience students gain from analysing and interpreting data during the coursework and controlled assessment course elements is also highly valued.

### PRIOR LEARNING REQUIRED

UK Government recommendations for Level 3 qualifications states that: "...specifications must build on the skills, knowledge and understanding set out in the whole GCSE subject content for mathematics for first teaching from 2015." We appreciate that UFP students come from a diverse range of cultures and backgrounds, so necessary level two content and terminology will be covered in UFP teaching. It is assumed that students will be conversant with the subject content that makes up the GCSE Mathematics course before the start of this course.

### EXAM BOARD

Cats Global Schools

### COURSE CONTENT

Pure Mathematics

Statistics

<ol style="list-style-type: none"> <li>1. Algebraic Expressions</li> <li>2. Quadratics</li> <li>3. Equations and inequalities</li> <li>4. Graphs and transformations</li> <li>5. Straight line graphs</li> <li>6. Circles and co-ordinated geometry</li> <li>7. Factor theorem</li> <li>8. Binomial expansion</li> <li>9. Trigonometric ratios</li> <li>10. Trigonometric identities and equations (including Radians)</li> <li>11. Differentiation</li> <li>12. Integration</li> <li>13. Exponentials and Logarithms</li> <li>14. Sequences and series</li> </ol>	<ol style="list-style-type: none"> <li>1. Measures of central tendency</li> <li>2. Measures of spread (variation)</li> <li>3. Compare and interpret bivariate data</li> <li>4. Correlation and Regression analysis</li> <li>5. Effect of outliers on data</li> <li>6. Presenting data in a user-friendly manner</li> </ol>
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### ASSESSMENT

Formal internal assessments take place regularly about once every half term and homework is set on a regular basis. Grades are determined by Course work, Controlled assessment and final examinations..

Assessment	Length of paper	Weighting
Coursework	Data analysis coursework, focus on analysing discrete data Written in Word; calculations in Excel	10%
Controlled Assessment	100 marks 2 hour 15 minutes written paper	10%



End of Year exams	3 papers 1 hour 20 minutes each written paper	80%
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### TEXTBOOKS/REVISION GUIDES

Title	ISBN	Author
Pure Mathematics Year 1/AS	978-1-292-18339-8	Pearson
Pure Mathematics Year 2	978-1-292-18340-4	Pearson

### HIGHER EDUCATION PATHWAYS

Mathematics opens a large range of career options as, together with other sciences, it is important for technology, research, conservation, resource management, social work, the medical profession, and many fields in finance as well as many other occupations.

### COMPLEMENTARY SUBJECTS OF STUDY

Business, Economics, Physics.

### CURRICULUM DIRECTOR

Mr Scott Graham