# IB Math Applications & Interpretations SL Year 2 Subject Group Overview - Semester 1

| Unit Name | Topic 1 – Number and Algebra | Topic 4 – Statistics and probability | **Topic 2: Functions** |
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| Time Frame | 4 Weeks | 9 Weeks | 5 Weeks *(will finish this topic during Semester 2)* |
| Standards/ IB Topics | Topic 1: AI SL 1.1 – 1.8 | Topic 4: AI SL 4.1 – 4.11 | Topic 2 : AI SL 2.1 – 2.6 |
| Content Specific Information | 1.1 Operations with numbers, scientific notation<br>1.2 Arithmetic Sequences and series<br>1.3 Geometric Sequences and series<br>1.4 Financial Applications of Geometric Sequences<br>1.5 Laws of Exponents and logs<br>1.6 Approximation, significant figures, percentage error<br>1.7 Amortization and annuities<br>1.8 Using technology to solve systems | 4.1 Population, samples, outliers<br>4.2 Presentation of data, box-whisker plots, histograms<br>4.3 Measures of central tendency & dispersion<br>4.4 Linear Regression<br>4.5 Probability of Events<br>4.6 Probability diagrams, combined events, conditional probability, independent events<br>4.7 Discrete random variables and expected Value<br>4.8 Binomial distribution<br>4.9 Normal distribution<br>4.10 Spearman's rank correlation coefficient<br>4.11 Chi-squared test for independence and t-test | 2.1 Linear Equations, Parallel, Perpendicular Lines<br>2.2 Domain, Range, Inverses<br>2.3 Graphs of Functions<br>2.4 Key features of Graphs<br>2.5 Modeling with linear, quadratic, exponential, cubic, and sinusoidal function<br>2.6 Modeling with functions in real context |
| Common Assessments / Major Projects | Daily Assignments/Other formative assessments<br>Summative Assessments | Daily Assignments/Other formative assessments<br>Summative Assessments | Daily Assignments/Other formative assessments<br>Summative Assessments |
| Resources | My IB Resources (www.ib.org)<br>IB QuestionBank<br>Delta Math<br>Mathematics: Applications and Interpretations SL, Pearson/Hodder/Oxford textbook<br>Teacher Resources | My IB Resources (www.ib.org)<br>IB QuestionBank<br>Delta Math<br>Mathematics: Applications and Interpretations SL, Pearson/Hodder/Oxford textbook<br>Teacher Resources | My IB Resources (www.ib.org)<br>IB QuestionBank<br>Delta Math<br>Mathematics: Applications and Interpretations SL, Pearson/Hodder/Oxford textbook<br>Teacher Resources |

# IB Math Applications & Interpretations SL Year 2 Subject Group Overview - Semester 2

| Unit Name | Topic 2: Functions (continued) | Topic 3: Geometry and trigonometry | Topic 5: Calculus | IB Exam review |
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| Time Frame | 3 Weeks | 5 weeks | 5 Weeks | 4 Weeks |
| Standards/ IB Topics | Topic 2: AI SL 2.1 -2.6 | Topic 3: AI SL 3.1 – 3.6 | Topic 5: AI SL 5.1 – 5.8 | All AI standards 1.1-5.8 |
| Content Specific Information | 2.1 Linear Equations, Parallel, Perpendicular Lines<br>2.2 Domain, Range, Inverses<br>2.3 Graphs of Functions<br>2.4 Key features of Graphs<br>2.5 Modeling with linear, quadratic, exponential, cubic, and sinusoidal function<br>2.6 Modeling with functions in real context | 3.1 Distance, midpoint, volume, surface area in two and three dimensions<br>3.2 Sine, Cosine, Tangent Ratios, Sine Rule, Cosine Rule & Area of a Triangle<br>3.3 Right triangle trigonometry, angles of elevation and depression<br>3.4 The circle: arc length, sector area<br>3.5 Equations of perpendicular bisectors<br>3.6 Voronoi diagrams | 5.1 Concept of limit, derivative as a gradient of a function and a rate of change<br>5.2 Increasing and decreasing functions<br>5.3 Derivative – power rule<br>5.4 Tangents and normal<br>5.5 Anti-differentiation, initial conditions, definite integrals as area<br>5.6 Derivative of zero, local maximums and minimums<br>5.7 Optimization<br>5.8 Trapezoidal rule | 1.1-5.8 |
| Common Assessments / Major Projects | Daily Assignments/Other formative assessments<br>Summative Assessments | Daily Assignments/Other formative assessments<br>Summative Assessments | Daily Assignments/Other formative assessments<br>Summative Assessments | Mock IB Exam |
| Resources | My IB Resources (www.ib.org)<br>IB QuestionBank<br>Delta Math<br>Mathematics: Applications and Interpretations SL, Pearson/Hodder/Oxford textbook<br>Teacher Resources | My IB Resources (www.ib.org)<br>IB QuestionBank<br>Delta Math<br>Mathematics: Applications and Interpretations SL, Pearson/Hodder/Oxford textbook<br>Teacher Resources | My IB Resources (www.ib.org)<br>IB QuestionBank<br>Delta Math<br>Mathematics: Applications and Interpretations SL, Pearson/Hodder/Oxford textbook<br>Teacher Resources | Past IB exams<br>My IB Resources (www.ib.org)<br>IB QuestionBank<br>Delta Math<br>Mathematics: Applications and Interpretations SL, Pearson/Hodder/Oxford textbook<br>Teacher Resources |