

Diploma Programme subject outline – Group 5: mathematics			
School Name	High Point Central High School	School Code	0875
Name of DP Subject	Mathematical Studies SL		
Level	Higher <input type="checkbox"/>	Standard completed in two years <input type="checkbox"/>	Standard completed one year <input checked="" type="checkbox"/>
Name of teacher who completed this outline	Daniel Myers	Date of IB Training	
Date when outline was completed	9/20/2017	Name of workshop	

1. Course outline

- Use the following table to organize the topics to be taught in the course. If you need to include topics that cover other requirements you have to teach (for example, state standards), make sure that you do so in an integrated way, but also differentiate them using italics. Add as many rows as you need.
- This document should not be a day-to-day accounting of each unit. It is an outline showing how you will distribute the topics and the time to ensure that students are prepared to comply with the requirements of the subject.
- This outline should show how you will develop the teaching of the subject. It should reflect the individual nature of the course in your classroom and should not just be “copy and paste” from the subject guide.
- If you will teach both higher and standard level, make sure that this is clearly identified in your outline.

	Topic (as identified in the IB subject guide) <i>State the topics in the order you are planning to teach them</i>	Contents	Allocated Time	Assessment instruments to be used	Resources <i>List the main resources to be used, including information technology if applicable</i>
			One class is: <input type="text" value="90"/> minutes In one week there are: <input type="text"/> classes		
Year 1	Number and Algebra	Number Sets Basic Equations Systems of Equations Factoring Sequences and Summations Interest Currency Conversions	8 classes (12 hours)	Class discussions Homework Quizzes Exam (made from former IB questions) Banking Project	TI-nSpire
	Descriptive Statistics	Types of Data Frequency Tables Graphs Measures of Center and Spread Boxplots and Outliers	6 classes (9 hours)	Class discussions Homework Quizzes Exam (made from former IB questions)	TI-nSpire Excel
	Statistical Applications	Scatterplots Correlation Linear Regression Chi-Squared Test	5 classes (7.5 hours)	Class discussions Homework Quizzes Exam (made from former IB questions) Linear Regression Project M&M Lab	TI-nSpire

	Probability	Sets Venn Diagrams Probability Rules Tree Diagrams Conditional Prob. Normal Distributions	10 classes (15 hours)	Class discussions Homework Quizzes Exam (made from former IB questions)	TI-nSpire Normal Distribution Applet
	Logic	Propositions Connectives Truth Tables Argument Validity	4 classes (6 hours)	Class discussions Homework Quizzes Exam (made from former IB questions)	TI-nSpire
	Geometry and Trigonometry	Linear Equations Right Triangle Trig Non-Rt Triangle Trig 3d Figures SA and Volume	10 days (15 hours)	Class discussions Homework Quizzes Exam (made from former IB questions)	TI-nSpire
	Mathematical Models	Domain/Range Function notation Linear, Quadratic, Exponential, higher order polynomials Graphing and evaluating	10 days (15 hours)	Class discussions Homework Quizzes Exam (made from former IB questions)	TI-nSpire

	Calculus	Rate of Change Tangent Notation Power Rule Equation of Tangent Lines Sign diagrams Graph properties (increasing and decreasing) Extrema Optimization	8 days (12 hours)	Class discussions Homework Quizzes Exam (made from former IB questions)	TI-nSpire
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2. IB Internal assessment requirements to be completed during the course

Briefly explain how and when you will work on them. Include the date when you will first introduce the internal and external assessment requirements, when they will be due and how students will be prepared to complete them.

Internal assessment will be introduced late November and will be completed by Mid-March

3. Links to TOK

You are expected to explore links between the topics of your subject and TOK. As an example of how you would do this, choose one topic from your course outline that would allow your students to make links with TOK. Describe how you would plan the lesson.

Topic	Link with TOK (including description of the lesson plan)
Statistical Applications	Development of linear regression model and linkage to the Vitruvian Man hypothesis that a persons height should equal their armspan.

4. Approaches to learning

Every IB course should contribute to the development of students' approaches to learning skills. As an example of how you would do this, choose one topic from your outline that would allow your students to specifically develop one or more of these skill categories (thinking, communication, social, self-management, or research).

Topic	Contribution to the development of students' approaches to learning skills (including one or more skill category)
Logic	Students investigate what makes a logically valid argument and try to prove (or disprove) arguments created by classmates.

5. International Mindedness

Every IB course should contribute to the development of international-mindedness in students. As an example of how you would do this, choose one topic from your outline that would allow your students to analyze it from different cultural perspectives. Briefly explain the reason for your choice and what resources you will use to achieve this goal.

Topic	Contribution to the development of the attribute(s) of the IB learner profile
Trigonometry	Investigation between different ideas from various cultures about trigonometry

6. Development of the IB learner

Through the course it is also expected that students will develop the attributes of the IB learner profile. As an example of how you would do this, choose one topic from your course outline and explain how the contents and related skills would pursue the development of any attribute(s) of the IB learner profile that you will identify.

Topic	Contribution to the development of the attribute(s) of the IB learner profile
Calculus	Students investigate the informal idea of a limit and how they are applied to calculate the gradient at a single point. (inquirers, thinkers, reflective)

7. Resources

Are instructional materials and other resources available in sufficient quality, quantity, and variety to give effective support to the aims and methods of the courses? Briefly describe what plans are in place if changes are needed.

We currently have an adequate number of books and calculators to aid in student development.