

G l s r p d # S u r j u p p h # x e n f w # x w d g h • J u r x s # B # p d w k h p d w f v #			
School name	Roald Amundsen High School	School code	1145
Name of the DP subject <i>(indicate language)</i>	Mathematical Studies SL (English)		
Level <i>(indicate with X)</i>	Higher <input type="checkbox"/>	Standard completed in two years <input checked="" type="checkbox"/>	Standard completed in one year * <input type="checkbox"/>
Name of the teacher who completed this outline	John Evans, Olga Prappas	Date of IB training	October 2012
Date when outline was completed	2/4/2018	Name of workshop <i>(indicate name of subject and workshop category)</i>	Math Studies SL

* All Diploma Programme courses are designed as two-year learning experiences. However, up to two standard level subjects, excluding languages ab initio and pilot subjects, can be completed in one year, according to conditions established in the *Handbook of procedures for the Diploma Programme*.

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, national syllabus), 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-by-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 a “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/unit (as identified in the IB subject guide) <i>State the topics/units 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="51"/> minutes. In one week there are <input type="text" value="5"/> classes.		
Year 1	Topic 2 – Descriptive Statistics	2.1 – 2.6	14 Hours	Criterion A – quizzes and exams Criterion B – Formative assessment lessons Criterion C – Individual and group presentations Criterion D – Formative assessment lessons and custom designed problems	Pimental and Wall text Haese and Haese text IBO online resources Custom Designed Problem Sets and Activities Online Databases IB Questionbank Online Problem Sets
	Topic 1 – Numbers and Algebra	1.1 – 1.6, 1.9	15 Hours		
	Topic 6 – Mathematical Models	6.1 – 6.4	10 Hours		
	Topic 5 – Geometry and Trigonometry	5.1 – 5.6	18 Hours		
	Topic 4 – Statistical Applications	4.1 – 4.4	18 Hours		
	Project		10 hours		
Year 2	Project		15 hours	Criterion A – quizzes and exams Criterion B – Formative assessment lessons Criterion C – Individual and group presentations Criterion D – Formative assessment lessons and custom designed problems	Pimental and Wall text Haese and Haese text IBO online resources Custom Designed Problem Sets and Activities Online Databases IB Questionbank Online Problem Sets
	Topic 6 – Mathematical Models	6.5 – 6.7	10 Hours		
	Topic 3 – Logic, Sets and Probability	3.1 – 3.7	20 Hours		
	Topic 1 – Numbers and Algebra (Arithmetic and Geometric Seq. and Series)	1.7, 1.8	6 Hours		
	Topic 7 – Introduction to Differential Calculus	7.1 – 7.6	18 Hours		

2. IB internal assessment requirement to be completed during the course

Briefly explain how and when you will work on it. Include the date when you will first introduce the internal assessment requirement to your students, the different

stages and when the internal assessment requirement will be due.

The IA will be introduced to students during the second half of Year 1. During the last six weeks of the school year, students will review several sample IAs as well as the rubrics. They will then work independently to complete a mock/practice IA for review by instructors. If students show promise with their mock IA they will be encouraged to continue working on them over the summer break. If not, then instructors will work with students on identifying a new topic.

In September of year two, students would once again be given projects from previous years which will be discussed. Students then will work with the instructors to help those who need to arrive at a topic of interest. A time line will be given with the project broken down into specific blocks and as the year progression projects will be evaluated at the end of each of these blocks to determine how their projects are progressing. The IA's will be due by December of Year 2 so that there is adequate time for revisions, if necessary. Class time will be devoted for peer editing and suggestions for improvement/clarity.

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 lesson plan)
Topic 3 – Logic, Sets and Probability	The concept of fallacies is present in several areas in topic 3. Inductive and Deductive Logic and fallacy to to the Gambler’s fallacy. The class can explore what is a fallacy, and why people fall into these fallacies. Other TOK links within this topic: theoretical and experimental probability and why they don’t always match. The perception of risk, in business, in medicine and safety in travel, what is an acceptable risk.

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)
IA Project	Self-management : Organization and Reflection. Students must complete the IA outside of the classroom, concurrently with their other studies. They need to plan their time to ensure that they meet deadlines. The need to use technology effectively and productively. Additionally, they must reflect on their hypothesis and practices while analysing their results and validity. Additionally, they need to plan for preparing for their examinations in this class, as well as in others.

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 analyse 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 international mindedness (including resources you will use)
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Topic 2 – Descriptive Statistics	<p>The benefits of sharing and analyzing data from different countries. Students come in with preconceived ideas about the world and its populations. There is so much data available on different countries and populations. Through analyzing this data, students can get a more accurate understanding of the world.</p> <p>There are several videos (Han Rosling is one presenter), who has examined various world data over time. Students can view these and begin to see how their expectation may not be supported by the data.</p> <p>Additionally, the concepts from the japanese methods for teaching mathematics will be used with the students throught the course. Students will work in pairs or triads on challenging problems and will spend considerable time trying to solve the problem.</p>
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6. Development of the IB learner profile

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
Topic 5	Communicators – Students work in groups to critique each other’s reasoning and present to the class.
Topic 6	Critical thinking is a skill that is essential for the IB learner profile. This unit requires stuents to taken given information and develop an appropraite model. The IB learner is willing and motivated to think critically and creatively so as to solve complex problems.

7. Resources

Describe the resources that you and your student will have to support the subject. Indicate whether they are sufficient in terms of quality, quantity and variety. Briefly describe what plans are in place if changes are needed.

Mathematical Studies for the IB Diploma 2nd edition, Ric Pimental and Terry Wall, IBO online resources, myIB, Custom Designed Problem Sets and Activities, Online Databases, IB Questionbank, Online Problem Sets, TI-84 graphic display calculators. At this time the resources that we employ seem to be sufficient.

