IBDP: Mathematics Applications and Interpretations SL

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Should you wish to learn more about our course or to discuss your learner's progress, please reach out to the email above to schedule a time to meet.

Course Description and Units of Learning:

The IB DP Mathematics: applications and interpretation course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasizes the meaning of mathematics in context by focusing on topics that are often used as applications or in mathematical modelling. To give this understanding a firm base, this course includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics. Students are encouraged to solve real-world problems, construct and communicate this mathematically and interpret the conclusions or generalizations.

Students should expect to develop strong technology skills, and will be intellectually equipped to appreciate the links between the theoretical and the practical concepts in mathematics. All external assessments involve the use of technology. Students are also encouraged to develop the skills needed to continue their mathematical growth in other learning environments.

The internally assessed exploration allows students to develop independence in mathematical learning. Throughout the course students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas.

For a more detailed exploration of this course, the IB Subject Guide is available at this link.

Numbers and Algebra

Number and algebra allow us to represent patterns, show equivalencies and make generalizations which

enable us to model real-world situations. Algebra is an abstraction of numerical concepts and employs variables to solve mathematical problems.

Functions
Models are depictions of real-life events using expressions, equations or graphs while a function is defined
as a relation or expression involving one or more variable. Creating different representations of functions to
model the relationships between variables, visually and symbolically as graphs, equations and/or tables

represents different ways to communicate mathematical ideas.
Geometry and Trigonometry
Geometry and trigonometry allow us to quantify the physical world, enhancing our spatial awareness in
two and three dimensions. This branch provides us with the tools for analysis, measurement and transformation of quantities, movements and relationships.
Statistics and Probability
Calculus

This year we have begun planning and implementing units of study based on our Critical Learning Outcomes within the IB MYP and DP frameworks. Please see ManageBac for unit overviews as they are taught throughout the year.

Assessment in the Diploma Programme

Assessment is a key component of the learning process as it allows teachers to respond with targeted feedback to learners for continued growth and to revise their instruction to better meet the needs of their learners. In order to provide learners with the opportunity to reach critical learning outcomes and develop a range of approaches to learning skills, our IB Diploma teachers develop rigorous tasks that embrace a variety of strategies in line with desired learning outcomes and with each course's internal and external assessments.

Working backwards from these assessment components, teachers craft learning experiences which support each learner's mastery of key content, concepts, and skills in every subject. Learners can expect to receive regular feedback on all three elements, with important culminating experiences such as IA drafts and mock examinations in the second year. For culminating tasks, teachers and learners are guided by criteria provided at least one week prior to the due date. DP teachers also work to ensure that learners not only understand but engage in applying evaluation criteria to their own work as well as that of their peers. Core components such as Theory of Knowledge, CAS, and the Extended Essay support each learner's progress across the programme, as learners apply critical thinking, the design cycle, and research skills to each subject.

Families and learners at AISM can expect to receive regular reporting of their performance as they work towards mastery of critical learning outcomes.

Learning Management Systems

Across the Secondary School, we utilize ManageBac for sharing key activities and assessments, as a digital workspace, for communication with learners, and for reporting on learner performance to families. Some teachers may supplement the digital learning environment with Google Classroom, and you can expect an emailed invitation to sign up for regular updates from Google Classroom if so.

Homework

Any learning activity which is expected to take place outside of the classroom will appear as assignments and tasks on ManageBac. Homework is most often an extension of activities or projects either begun or included in the classroom, but may include common activities like reading, reinforcement of content or skills within a unit of study, or distributed practice activities, such as flashcards for example, to support learner recall of low-level content.

Reporting

As a rough guide, learners and families can expect an update on performance every few weeks. These updates, available in ManageBac, represent a check-in on learner performance toward mastering critical course objectives and learning outcomes, prior to each unit’s culminating assessment.