

Group 5

MATHEMATICS:

- ANALYSIS AND APPROACHES HL (AA HL)
- ANALYSIS AND APPROACHES SL (AA SL)
- APPLICATIONS AND INTERPRETATIONS SL (AI SL)

- One of the above subjects is compulsory
- The choice depends on the student's skills, talents, interests, planned field of study, choice of other subjects of the IB program
- If you want to choose AA HL and AA SL, the approval of the teaching teacher is required

AA HL is **not** the equivalent of the Polish *zakres rozszerzony* (extended level) - it goes far beyond the Polish core curriculum. Mathematical analysis is taught at a high level. Statistics is taught in a much broader scope, e.g. linear regression, In probability, there is the random variable, the expected value, and probability distributions. There are also complex numbers and their applications. A lot of space in the program is devoted to in-depth theorem proving, including: the principles of mathematical logic used in proofs, indirect proofs and proofs by mathematical induction. There are also vector spaces that are not in the Polish program. It is worth remembering that the use of a graphing calculator is a very important integral part of this program. Many mathematical problems are solved based on advanced functions of the graphing calculator.

AA SL certainly **should not** be identified with the Polish *zakres podstawowy* (basic level). You can try to compare it in parts to the Polish program at the extended level, but this program goes beyond the Polish extended curriculum (e.g. it contains derivatives and integrals and their interpretation, and statistics is taught in a much wider scope). At the same time, although the content is quite extensive, the teaching is somewhat shallower than in the Polish curriculum. It is worth remembering that the use of a graphing calculator is a very important integral part of this program. Many mathematical problems are solved based on advanced features of the graphing calculator.

The AI SL mathematics program was created for students who want to study in fields where mathematics is used to model and interpret reality, i.e. natural subjects, statistics, economics, business, psychology, social sciences, etc. This program emphasizes the many possible applications of mathematics. From the very beginning, students work on creating mathematical models to best

describe reality. Compared to the Polish program, more material is covered, but for some of it graphing calculators are used, which enables a faster arrival at results and a possibility of interpretation and discussion.