Mathematics

1ere (11th Grade FB) *[4 periods per week]*

Mr. Stephane Plancke

Course Description

(extract from official instruction – French dept of Education)

The 11th grade class is designed to prepare for the general baccalaureate, and beyond for successful pursuit of studies and professional integration.

Mathematics specialty education in the first general class is designed with the following intentions:

- allow each pupil to consolidate the achievements of 10th grade, to develop their taste for mathematics, to appreciate its processes and objects so that they can experience first-hand the effectiveness of mathematical concepts and the simplification and generalization that allows mastery of abstraction;
- develop interactions with other specialty courses;
- prepare for the choice of lessons in 12th grade class: in particular the choice of the teaching of mathematics, possibly accompanied by optional teaching of expert mathematics, or choice of teaching optional complementary mathematics.

The mathematics program defines a body of knowledge and skills, realistic and ambitious, which builds on the 10th grade curriculum in a concern for consistency, by reactivating the concepts already studied and adding a reasonable number of new concepts, to be studied in sufficient depth.

As an extension of previous cycles, we work on the six major skills:

- **research**, experiment, in particular using software tools;
- **model**, simulate, validate or invalidate a model;
- **represent**, choose a frame (numerical, algebraic, geometric ...), change register;
- **reason**, demonstrate, find partial results and put them into perspective;
- **calculate**, apply techniques and implement algorithms;
- **communicate** a result orally or in writing, explain a process.

Problem solving is a privileged framework for developing, mobilizing and combining many of these skills. However, to take initiatives, imagine avenues of solutions and engage in it without going astray, the student must have automatic systems. These indeed facilitate intellectual work by freeing the mind from the worries of implementation technical and broaden the scope of the steps likely to be taken.

The installation of these reflexes is favored by the implementation of ritual activities, including arithmetic (mental or reflective, numerical or literal). It is conducted together with the resolution of motivating and substantial problems, in order to stabilize knowledge, methods and strategies.

Timeline

2nd degree polynomials: (3 weeks)

Probabilities – Part 1: (2 weeks)

Sequences – Part 1: (1 week – October break – 2 weeks)

The dot product: (2 weeks)

Sequences and series – Part 2: (1 week)

Thanksgiving

Calculus – Part 1: (1 week – Winter Break – 2 weeks)

Calculus – Part 2: (2 weeks)

Trigonometry: (2 weeks)

Probabilities – Part 2: (2 weeks)

Coordinate geometry: (2 weeks – February Break – 1 week)

Exponential function: (3 weeks)

Coordinate geometry: (2 weeks)

Review of year content based on problem solving.