Curriculum for *Mathematics*
Grades 5-12
Short version

Reference curriculum: Thuringia, Germany
Year created: 2018

This curriculum is based on the curriculum of the Bundesland Thuringia for the post-secondary Abitur diploma in mathematics (2011), the post-secondary Haupt- und Realschule school-leaving certificate (2011) as well as the core curriculum of grades 10-12 of the Upper School track of the German Schools Abroad for the subject *Mathematics* (as decided by the assembly of ministers of education of the German states on April 29, 2010)

in accordance with the North America region

while taking into account the education standards for Mathematics for the post-secondary *Abitur diploma* (as decided by the assembly of ministers of education of the German states on October 18, 2012) and the subject-specific notes for the preparation and grading of task proposals in the subject of Mathematics (as decided by the Federation-Länder Commission for Schools Abroad (BLASchA) on September 23/24, 2015).

The following diploma are awarded to the students at the GISW by the end of grade 10 of their compulsory secondary education:

- *Hauptschulabschluss* school-leaving certificate, upon completion of grade 9,
- *Qualifizierender Hauptschulabschluss* school-leaving certificate, upon completion of grade 9,
- *Realschulabschluss* school-leaving certificate, upon completion of grade 10.

The diploma awarded upon completion of the students' compulsory secondary education offer multiple career and educational paths:

- immediate access to vocational training and apprenticeships,
- transfer to vocational schools for continued education,
- transfer to US High School,

At the end of grade 12, the students at the GISW may take the DIA exam (Deutsche Internationale Abiturprüfung) and are awarded the High School Diploma of the state of Maryland.

Overview of the fields of learning for Orientation Level, Middle School and Upper School through grade 10

Grade (hours per week/ hours)							
5 (5 / 140 hours)	**5.1** **Data I** **20 h**	**5.2** **Natural numbers** **30 h**	**5.3** **Symmetry** **20 h**	**5.4** **Calculating** **30 h**	**5.5** **Areas and objects** **25 h**	**5.6** **Integers** **15 h**	
6 (5 / 140 hours)	**6.1** **Divisibility of natural numbers** **20 h**	**6.2** **Fractions** **28 h**	**6.3** **Angles, circles and triangles** **12 h**	**6.4** **Calculations with fractions** **60 h**	**6.5** **Data II** **10 h**	**6.7** **Terms and equations I** **10 h**	
7 (4 / 112 hours)	**7.1** **Mapping** **20 h**	**7.2** **Percentages and interest** **12 h**	**7.3** **Probability theory I – random experiments, relative frequency and Laplace probability 12 h**	**7.4** **Rational numbers** **24 h**	**7.5** **Congruency** **10 h**	**7.6** **Terms and equations II** **22 h**	**7.7** **Areas and volumes** **12 h**
8 (4 / 112 hours)	**8.1** **Term conversions and formulas** **16 h**	**8.2** **Linear functions and equations** **32 h**	**8.3** **Square roots and real numbers** **12 h**	**8.4** **Circles** **12 h**	**8.5** **Probability theory II – tree diagram** **10 h**	**8.6** **Pythagorean theorem and objects (pyramid, cylinder, cone, ball)** **30 h**	
9 (4 / 112 hours)	**9.1** **Systems of linear equations** **16 h**	**9.2** **Quadratic functions and quadratic equations** **38 h**	**9.3** **Similarity – triangle similarity postulates, 3D objects** **20 h**	**9.4** **Probability theory III** **14 h**	**9.5** **Powers and power functions** **24 h**		

10 (4 / 112 hours)	**10.1** **Trigonometric geometry** **16 h**	**10.2** **Trigonometric functions, exponential functions and logarithm functions** **40 h**	**10.3** **Polynomial functions** **13 h**	**10.4** **Linear algebra – points and straight lines in space, vectors** **13 h**	**10.5** **Analysis – average and current rate of change** **13 h**	**10.6** **Probability theory IV** **13 h**	

Overview of the fields of learning for the Upper School in grades 11 and 12

Grade (hours per week/ hours)					
11 (4 / 112 hours)	**11.1** **Sequences and limits** **10h**	**11.2** **Derivatives** **25h**	**11.3** **Analyzing polynomial functions** **25 h**	**11.4** **Calculus** **20h**	**11.5** **Analytical geometry/ linear algebra** **40h**
12 (4 / 112 hours)	**12.1** **Stochastics I** **30h**	**12.2** **Exponential functions** **20h**	**12.3** **Rational functions** **20h**	**12.4** **Stochastics II** **10h**	**12.5** **Differential equations** **5h**

Information on the evaluation of performance in class

Overview			
Written performance:	Class exams and tests		
Other performance in class:	Class participation, oral quizzes, tests, homework, projects, presentations		
Weighting			
Written performance:	50 %		
Other performance in class:	50 % Class participation, oral quizzes, tests, homework, projects, presentations		
Number of exams/tests			
Grades 5/6:	4 per school year (Duration:	Grades 5-6	45 minutes each)
Grades 7-10:	4 per school year (Duration:	Grades 7-9 Grade 10	60 minutes each 90 minutes each)
Grades 11/12:	2 per school year (Duration:	Grades 11-12	90-135 minutes each) („Vorabitur“ exam in 12.1 and written Abitur exam in 12.2: 240 minutes)