

Matching grid of Italian Mathematics syllabus and OCLS Mathematics contents

Liceo Artistico, Classico, Linguistico, Musicale, Scienze Umane	Scienze Umane_social-economic option	Liceo scientifico	OCLS Maths corresponding chapters
<i>1st and 2nd year</i>	<i>1st and 2nd year</i>	<i>1st and 2nd year</i>	
Whole and rational numbers calculations	<i>same as col A</i>	<i>same as col A</i>	3. Number
Arithmetic operations properties	<i>same as col A</i>	<i>same as col A</i>	3. Number
GCD and Euclid's algorithm	<i>same as col A</i>	<i>same as col A</i>	3. Number
Real numbers	<i>same as col A</i>	<i>same as col A</i>	3. Number
Irrational numbers and approximation	<i>same as col A</i>	<i>same as col A</i>	3. Number
Introduction to Monomial and Polynomial	<i>same as col A</i>	<i>same as col A</i>	4. Algebra
Solving polynomial equations	<i>same as col A</i>	<i>same as col A</i>	4. Algebra
\	\	Euclidean vector, linear dependence and independence, dot and cross product and basics of matrices operations	?
Basics of Euclidean geometry	<i>same as col A</i>	<i>same as col A</i>	5. Geometry
The Pythagorean theorem	<i>same as col A</i>	<i>same as col A</i>	6. Pythagoras' Theorem and Trigonometry
Transformation in Euclidean geometry (with particular focus on Thales' theorem)	<i>same as col A</i>	<i>same as col A</i>	5. Geometry
\	\	Basics properties of circumference	5. Geometry
Construction of basic geometric figures (with compass or dedicated software)	<i>same as col A</i>	<i>same as col A</i>	5. Geometry
Using Cartesian coordinate system (points and	<i>same as col A</i>	<i>same as col A</i>	7. Graphs
\	\	Quadratic functions and graphical representation of conic sections using Cartesian coordinate system	7. Graphs (?)
\	\	Circular functions, their properties and relations, trigonometric functions and laws	6. Pythagoras' Theorem and Trigonometry (?)
Sets and functions	<i>same as col A</i>	<i>same as col A</i>	4. Algebra
Equations, Inequations and Simultaneous equations	<i>same as col A</i>	<i>same as col A</i>	4. Algebra
Direct and Inverse proportionality	<i>same as col A</i>	<i>same as col A</i>	4. Algebra
Linear, quadratic functions, and constant	<i>same as col A</i>	<i>same as col A</i>	4. Algebra
\	\	Polynomial , piecewise linear, circular functions and their	4. Algebra
Data analysis and representation	<i>same as col A</i>	<i>same as col A</i>	7. Graphs
Introduction to Statistics	<i>same as col A</i>	<i>same as col A</i>	8. Statistics
\	\	Statistical diagrams	8. Statistics

Introduction to the Mathematical model	<i>same as col A</i>	<i>same as col A</i>	
Solving problems through algorithms	<i>same as col A</i>	<i>same as col A</i>	
\	\	Computable functions	
<i>3rd and 4th year</i>	<i>3rd and 4th year</i>	<i>3rd and 4th year</i>	
Basics of Polynomial factorization	<i>same as col A</i>	\	4. Algebra
Introduction to linear algebra	<i>same as col A</i>	\	4. Algebra
Circumference and circle	<i>same as col A</i>	<i>same as col A</i>	4. Algebra
The infinity symbol	<i>same as col A</i>	<i>same as col A</i>	
Introduction to approximation theory	<i>same as col A</i>	<i>same as col A</i>	
Conic sections	<i>same as col A</i>	<i>same as col A</i>	5. Geometry
Circumference and circle properties	<i>same as col A</i>	<i>same as col A</i>	5. Geometry
Introduction to circular functions	<i>same as col A</i>	<i>same as col A</i>	
Main examples of loci	<i>same as col A</i>	<i>same as col A</i>	
Trigonometric functions and laws	<i>same as col A</i>	<i>same as col A</i>	6. Pythagoras' Theorem and Trigonometry
Lines and planes: parallelism and perpendicular	<i>same as col A</i>	<i>same as col A</i>	5. Geometry
\	\	Polyhedrons and solids of revolution	5. Geometry
Quadratic functions, equations, and inequations	<i>same as col A</i>	Solving polynomial functions	4. Algebra
\	\	Simple examples of mathematical series, and arithmetical and geometrical progressions	
Polynomial, rational, circular, exponential functions, and logarithms	<i>same as col A</i>	Extensions of logarithms and exponential functions	
Exponential growth and decay	Models of exponential growth, decay, and periodic fluctuations	Models of exponential growth, decay, and periodic fluctuations	8. Statistics
\	Graphical analysis of main functions, their characteristics, function compositions, and inverse functions with qualitative analysis on them.	Graphical analysis of main functions	
\	Average growth and speed of variation	<i>same as col. B</i>	8. Statistics
Basics of distributions, standard deviation, correlation and dependence, regression, and sampling	<i>same as col A</i>	<i>same as col A</i>	8. Statistics
Conditional and joint probability, Bayes' theorem and its application, basics of Combinatorics [<i>not Liceo Artistico</i>]	<i>same as col A</i>	<i>same as col A</i>	9. Probability
Extension of Mathematical model	<i>same as col A</i>	<i>same as col A</i>	

<p>\</p> <p>5h year</p> <p>Basics of analytic geometry: lines, planes, spheres, and main polyhedrons</p> <p>Extensions of main functions</p> <p>The limit of a function and of a sequence</p> <p>Basics of Infinitesimal calculus: continuous functions, derivative, integration - simple</p> <p>\</p> <p>Binomial distribution and uniform distribution (some examples) <i>[not Liceo Artistico]</i></p> <p>Construction and analysis of a mathematical model <i>[not Liceo Artistico]</i></p> <p>\</p>	<p>Mathematical basics of microeconomics, expected utility hypothesis, macroeconomics (Keynesian tradition)</p> <p>5h year</p> <p><i>same as col A</i></p> <p><i>same as col A</i></p> <p><i>same as col A</i></p> <p><i>same as col A</i></p> <p>\</p> <p><i>same as col A</i></p> <p><i>same as col A</i></p> <p>Optimization</p>	<p>\</p> <p>Analytical study of lines, planes, and spheres</p> <p>\</p> <p>Differential equations (with particular focus on Newton's Law)</p> <p>Binomial distribution and uniform distribution (binomial distribution, normal distribution, Poisson distribution)</p> <p><i>same as col A</i></p> <p><i>same as col. B</i></p>	<p>5. Geometry</p> <p>9. Probability (?)</p>
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