Prof.Mathgic 頂尖數學速效技巧課程目錄 *Prof.Mathgic* Course Content

只需選擇課程難度及課題編號，電郵至 drmathewmatician@gmail.com，或 WhatsApp 至 61253120，收到報名後會給您 2 個上課時間選擇，如可以便付費留位。

Just select the course difficulty and topic number, email to drmathewmatician@gmail.com, or WhatsApp to 61253120, and we will give you two options for the class time after receiving the registration. You have pay to reserve a place.

如您不清楚是哪個課題，可拍/寫/形容該課題或題目給我們。

If you are not sure which topic it is, you can shoot/write/describe the topic or topic to us.

課程難度 Difficulty | 基礎 Basic | 進階 Advanced

課程及課題（寫出課題編號，如選擇 HKDSE 數學 M1（中文版）中的「二項展式」，基礎難度，電郵或 WhatsApp 時需填寫 “115 基礎”）

Curriculums and topics (Write down the topic number, e.g. If you choose advanced level of “Binomial expansion” in HKDSE Math. M1(English version), you should write down “101advanced” in the email or WhatsApp)

HKDSE Math. M1 (English version)	HKDSE 數學 M1（中文版）
101. Binomial expansion	115. 二項展式
102. Exponential functions and logarithmic functions	116. 指數函數與對數函數
103. Limits and derivatives	117. 極限與導數
104. Differentiation	118. 微分法
105. Applications of differentiation	119. 微分法的應用
106. Indefinite integration and its applications	120. 不定積分法及其應用
107. Definite integration and its applications	121. 定積分法及其應用
108. Estimate definite integrals by trapezoidal rule	122. 梯形法則
109. Further probability	123. 進階概率
110. Discrete probability distributions	124. 離散概率分佈
111. Some discrete probability distributions	125. 一些特殊的離散概率分佈
112. Normal distribution and its applications	126. 正態分佈及其應用
113. Point and interval estimation	127. 點及區間估計
114. Exam-based Integrated Training	128. 公開考試綜合訓練
HKDSE Math. M2 (English version)	**HKDSE 數學 M2（中文版）**
201. Surds	221. 根式
202. Mathematical induction	222. 數學歸納法
203. Binomial theorem	223. 二項式定理
204. More about trigonometric functions (I)	224. 續三角函數(一)
205. More about trigonometric functions (II)	225. 續三角函數(二)
206. Introduction to number *e* and natural logarithms	226. *e* 及自然對數的簡介
207. Limits and derivatives	227. 極限與導數
208. Differentiation (I)	228. 微分法(一)
209. Differentiation (II)	229. 微分法(二)
210. Applications of differentiation	230. 微分法的應用
211. Indefinite integration (I)	231. 不定積分法(一)
212. Indefinite integration (II)	232. 不定積分法(二)
213. Definite integration	233. 定積分法
214. Applications of definite integration	234. 定積分法的應用
215. Matrices	235. 矩陣
216. Determinants and inverses of square matrices	236. 行列式與方陣的逆矩陣
217. System of linear equations	237. 線性方程組
218. Introduction to vectors	238. 向量簡介
219. Scalar Products and vector products with applications	239. 純量積與向量積及其應用
220. Exam-based Integrated Training	240. 公開考試綜合訓練
HKDSE Math. senior form compulsory part (English version)	**HKDSE 高中數學必修部分（中文版）**
301. Quadratic equations in one unknown (I)	330. 一元二次方程(一)
302. Quadratic equations in one unknown (II)	331. 一元二次方程(二)
303. Functions and graphs	332. 函數及其圖像
304. Exponential functions	333. 指數函數

學生成就

GCE 數學 A*、進階數學 A*
IGCSE 數學 A*、SAT 滿分
HKDSE 數學(必修及 2 個選修)5**、5*、5
HKDSE 數學必修部分 $4^+ > 80\%$

亞洲國際數學奧林匹克公開賽總決賽金獎、新加坡數學競賽金獎、環亞太杯國際數學進階賽一等獎、港澳盃金獎、全港小學數學比賽一等獎、全港小學數學遊蹤比賽團體冠軍、全港小學數學挑戰賽金獎、全港小學數學比賽創意解難冠軍、香港小學數學創意解難比賽金獎、數學大王一等獎、華夏盃一等獎、數學思維大激鬥金獎、小學數學精英大賽一等獎、Asia-Pacific Mathematical Olympiad – Gold Award, International Mathematics Competitions and Assessments for Schools (Australia) – High Distinction、…

305. Logarithmic functions	334. 對數函數
306. Equations of straight lines	335. 直線的方程
307. More about polynomials (I)	336. 續多項式(一)
308. More about polynomials (II)	337. 續多項式(二)
309. Simultaneous equations, one linear and one quadratic	338. 一次及二次的聯立方程
310. More about trigonometry	339. 續三角
311. Applications of trigonometry in 2-dimensional problems	340. 三角學的應用：二維空間
312. Variations	341. 變分
313. More about quadratic equations	342. 續二次方程
314. Basic properties of circles	343. 圓的基本性質
315. Tangents to circles	344. 圓的切線
316. Locus	345. 軌跡
317. Equations of circles	346. 圓的方程
318. Inequalities	347. 不等式
319. Linear programming	348. 線性規畫
320. More about graphs of functions	349. 續函數圖像
321. Permutation and combination	350. 排列與組合
322. More about probability	351. 續概率
323. Arithmetic and geometric sequences	352. 等差數列和等比數列
324. Summation of arithmetic and geometric sequences	353. 等差數列和等比數列的求和法
325. Applications of trigonometry in 3-dimensional problems	354. 三角學的應用：三維空間
326. Measures of dispersion	355. 離差的量度
327. Uses and abuses of statistics	356. 統計的應用及誤用
328. Exam-based Integrated Training (Paper 1)	357. 公開考試綜合訓練（卷一）
329. Exam-based Integrated Training (Paper 2)	358. 公開考試綜合訓練（卷二）
Junior secondary Math. (English version)	初中數學（中文版）
401. Directed numbers and the number line	440. 有向數及數線
402. Introduction to algebra	441. 代數簡介
403. Algebraic equations in one unknown	442. 一元代數方程
404. Percentages (I)	443. 百分法(一)
405. Estimation in numbers and measurement	444. 數值與度量的估算
406. Introduction to geometry	445. 幾何簡介
407. Symmetry and transformation	446. 對稱及變換
408. Areas and volumes (I)	447. 面積和體積(一)
409. Congruence and similarity	448. 全等及相似
410. Introduction to coordinates	449. 坐標簡介
411. Angles related to lines	450. 與線相關的角
412. Manipulation of simple polynomials	451. 簡易多項式的運算
413. Introduction to various stages of statistics	452. 統計工作簡介
414. Simple statistical diagrams and graphs (I)	453. 簡單的統計圖表和圖像(一)
415. Rate and ratio	454. 率及比
416. Identities and factorization	455. 恆等式及因式分解
417. Algebraic fractions and formulas	456. 代數分式與公式
418. More about factorization of polynomials	457. 續多項式的因式分解
419. Approximation and errors	458. 近似與誤差
420. Angles related to rectilinear figures	459. 與直線圖形相關的角
421. Simple statistical diagrams and graphs (II)	460. 簡單的統計圖表和圖像(二)
422. Linear equations in two unknowns	461. 二元一次方程
423. Laws of integral indices	462. 整數指數律
424. Introduction to deductive geometry	463. 演繹幾何簡介
425. Rational and irrational numbers	464. 有理數及無理數
426. Pythagoras' theorem	465. 畢氏定理
427. Areas and volumes (II)	466. 面積和體積(二)
428. Trigonometric ratios	467. 三角比
429. Linear inequalities in one unknown	468. 一元一次不等式
430. Percentages (II)	469. 百分法(二)
431. Special lines and centres in a triangle	470. 三角形的一些特殊的線和中心
432. Quadrilaterals	471. 四邊形
433. More about 3-D figures	472. 續立體圖形

434. Measures of central tendency	473. 集中趨勢的量度
435. Areas and volumes (III)	474. 面積和體積(三)
436. Coordinate geometry of straight lines	475. 直線的坐標幾何
437. Trigonometric relations	476. 三角比的關係
438. Applications of trigonometry	477. 三角的應用
439. Introduction to probability	478. 概率簡介
AP Calculus	**AP Statistics**
501. Functions (AB)	551. Graphical displays
502. Functions (BC)	552. Summarizing distributions
503. Limits and continuity	553. Exploring bivariate data
504. Differentiation (AB)	554. Exploring categorical data: Two-way tables
505. Differentiation (BC)	555. Planning and conducting surveys
506. Applications of differential calculus (AB)	556. Planning and conducting experiments
507. Applications of differential calculus (BC)	557. Probability as relative frequency
508. Antidifferentiation (AB)	558. Combining and transforming random variables
509. Antidifferentiation (BC)	559. The normal distribution
510. Definite integrals	560. Sampling distributions
511. Applications of integration to geometry (AB)	561. Confidence intervals
512. Applications of integration to geometry (BC)	562. Tests of significance-Proportions and Means
513. Further applications of integration (AB)	563. Tests of significance-Chi-square and slope of least squares line
514. Further applications of integration (BC)	564. Exam-based Integrated Training (Multiple Choice)
515. Differential equations (AB)	565. Exam-based Integrated Training (Free Response)
516. Differential equations (BC)	
517. Sequences and series (BC)	
518. Exam-based Integrated Training (AB Multiple Choice)	
519. Exam-based Integrated Training (AB Free Response)	
520. Exam-based Integrated Training (BC Multiple Choice)	
521. Exam-based Integrated Training (BC Free Response)	
IAL P1	**IAL P2**
601. Algebraic expressions	611. Algebraic methods
602. Quadratics	612. Coordinates geometry in the (*x*,*y*) plane
603. Equations and inequalities	613. Exponentials and logarithms
604. Graphs and transformations	614. The binomial expansion
605. Straight line graphs	615. Sequences and series
606. Trigonometric ratios	616. Trigonometric identities and equations
607. Radians	617. Differentiation
608. Differentiation	618. Integration
609. Integration	619. Exam-based Integrated Training
610. Exam-based Integrated Training	
IAL P3	**IAL P4**
621. Algebraic methods	631. Proof
622. Functions and graphs	632. Partial Fractions
623. Trigonometric functions	633. Coordinate geometry in the (*x*,*y*) plane
624. Trigonometric addition formulae	634. Binomial expansion
625. Exponentials and logarithms	635. Differentiation
626. Differentiation	636. Integration
627. Integration	637. Vectors
628. Numerical methods	638. Exam-based Integrated Training
629. Exam-based Integrated Training	
IAL FP1	**IAL FP2**
641. Complex numbers	651. Inequalities
642. Numerical solutions of equations	652. Series
643. Coordinate systems	653. Further complex numbers
644. Matrix algebra	654. First order differential equations
645. Series	655. Second order differential equations
646. Proof by mathematical induction	656. Maclaurin and Taylor series
647. Exam-based Integrated Training	657. Polar coordinates
	658. Exam-based Integrated Training
IAL FP3	**IAL S1**
661. Hyperbolic functions	671. Mathematical modelling
662. Further coordinate systems	672. Measures of location and spread
663. Differentiation	673. Representations of data
664. Integration	674. Probability
665. Vectors	675. Correlation and regression
666. Further matrix algebra	676. Discrete random variables
667. Exam-based Integrated Training	677. The normal distribution

	678. Exam-based Integrated Training
IAL S2	IAL S3
681. Binomial distributions 682. Poisson distributions 683. Approximations 684. Continuous random variables 685. Continuous uniform distribution 686. Sampling and sampling distributions 687. Hypothesis testing 688. Exam-based Integrated Training	691. Sampling 692. Combinations of random variables 693. Estimators and confidence intervals 694. Central limit theorem and testing the mean 695. Correlation 696. Goodness of fit and continency tables 697. Exam-based Integrated Training
IAL M1	IAL M2
701. Kinematics of a particle moving in a straight line 702. Dynamics of a particle moving in a straight line 703. Statics of a particle 704. Moments 705. Vectors 706. Exam-based Integrated Training	711. Projectiles 712. Variable acceleration 713. Centres of mass 714. Work and energy 715. Impulses and collisions 716. Statics of rigid bodies 717. Exam-based Integrated Training
IAL M3	IAL D1
721. Kinematics 722. Elastic strings and springs 723. Dynamics 724. Circular motion 725. Further centres of mass 726. Statics of rigid bodies 727. Exam-based Integrated Training	731. Algorithms 732. Graphs and networks 733. Algorithms on graphs 734. Route inspection 735. The Travelling Salesman Problem 736. Critical path analysis 737. Linear programming 738. Exam-based Integrated Training
IGCSE	
Number	Algebra and graphs
801. Number and language 802. Accuracy 803. Calculations and order 804. Integers, fractions, decimals and percentages 805. Further percentages 806. Ratio and proportion 807. Indices and standard form 808. Money and finance 809. Time	811. Algebraic representation and manipulation 812. Algebraic indices 813. Equations and inequalities 814. Linear programming 815. Sequences 816. Variation 817. Graphs in practical situations 818. Graphs of functions 819. Functions
Geometry	Mensuration
821. Geometrical vocabulary 822. Geometrical constructions and scale drawings 823. Similarity 824. Symmetry 825. Angle properties 826. Loci	831. Measures 832. Perimeter, area and volume
Coordinate geometry	Trigonometry
841. Straight-line graphs	851. Bearings 852. Trigonometry 853. Further trigonometry
Matrices and transformations	Probability
861. Vectors 862. Matrices 863. Transformations	871. Probability 872. Further probability
Statistics	
881. Mean, median, mode and range 882. Collecting and displaying data 883. Cumulative frequency	891. Exam-based Integrated Training (Mathematics) 892. Exam-based Integrated Training (Additional Mathematics)
SAT Subject Test Math. Level 1	SAT Subject Test Math. Level 2 (exclude the syllabus of Level 1)
901. Algebra 902. Geometry 903. Basic trigonometry 904. Algebraic functions 905. Elementary statistics 906. Miscellaneous topics (logic, number theory, arithmetic, geometric sequences) 907. Exam-based Integrated Training	911. Algebra 912. Geometry 913. Trigonometry 914. Functions 915. Statistics 916. Miscellaneous topics (logic and proof, number theory, sequences, limits) 917. Exam-based Integrated Training