

تم تحميل هذا الملف من موقع المناهج الإماراتية



الملف التوزيع الزمني للخطة الفصلية الفصل الأول للعام 2022-2023

[موقع المناهج](#) ⇨ [المناهج الإماراتية](#) ⇨ [الصف الثاني عشر المتقدم](#) ⇨ [رياضيات](#) ⇨ [الفصل الأول](#)

روابط مواقع التواصل الاجتماعي بحسب الصف الثاني عشر المتقدم



روابط مواد الصف الثاني عشر المتقدم على تلغرام

[الرياضيات](#)

[اللغة الانجليزية](#)

[اللغة العربية](#)

[التربية الاسلامية](#)

المزيد من الملفات بحسب الصف الثاني عشر المتقدم والمادة رياضيات في الفصل الأول

<a href="#">رياضيات متكاملة دليل المعلم</a>	1
<a href="#">دليل المعلم</a>	2
<a href="#">الفصل الاول الوحدة الأولى المتباينات غير الخطية</a>	3
<a href="#">جميع أوراق عمل</a>	4
<a href="#">مراجعة نهائية قبل الامتحان</a>	5



## Grade 12 Advanced Stream Scheme of Work, Term 1, Academic Year 2022-2023

### Purpose

- to define the **required** Advanced Stream Mathematics Student Learning Outcomes to be covered during the term for this grade;
- to **recommend** the pace at which the Student Learning Outcomes are to be covered. The term's content is broken down into eleven teaching weeks, allowing the coverage of topics within each week to be flexible.

### Assessment

- Assessment details for Term 1 will be communicated separately.

Teachers should incorporate the Standards for Mathematical Practice (SMPs) in their instruction when and where appropriate. The Standards for Mathematical Practice are

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

### Why are the Standards for Mathematical Practice important?

The Standards for Mathematical Practice set expectations for using mathematical language and representations to reason, solve problems, and model in preparation for careers and a wide range of college majors.

**Week 1: Aug. 29 – Sept. 2, 2022**

**Week 2: Sept. 5 – 9, 2022**

**Chapter 1 – Precalculus Review**

C1L1 – Polynomials and Rational Functions	These two weeks can be used to get to know your students, establish classroom routines, finalize class lists, and administer teacher-created diagnostics. It is also an opportunity to review the prerequisite concepts in Chapter 1. While these lessons will not be assessed directly, mastery of the material contained therein is extremely important for students' success in Calculus.
C1L2 – Inverse Functions	
C1L3 – Trigonometric and Inverse Functions	
C1L4 – Exponential and Logarithmic Functions	
C1L5 – Transformations of Functions	

**Week 3: Sept. 12 – 16, 2022**

**Chapter 2 – Limits and Continuity**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C2L1 – A Brief Preview of Calculus: Tangent Lines and the Length of a Curve	<ul style="list-style-type: none"><li>• Estimate the slope of a given function at a given point using tables.</li><li>• Estimate an arc length of a given function.</li></ul>	<ul style="list-style-type: none"><li>• Find the equation of tangent lines.</li><li>• Estimate the arc length of a curve of a function.</li></ul>
C2L2 – The Concept of Limit	<ul style="list-style-type: none"><li>• Learn the concept of limits.</li><li>• Find a limit algebraically or graphically, if it exists.</li><li>• Determine the existence of a limit by using one-sided limits.</li></ul>	<ul style="list-style-type: none"><li>• Understand the concept of the limit of a function.</li><li>• Understand the concept of continuity of a function.</li><li>• Determine limits graphically and algebraically.</li></ul>

**Week 4: Sept. 19 – 23, 2022**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C2L3 – Computation of Limits	<ul style="list-style-type: none"><li>• Find limits of polynomial, rational, and trigonometric functions using theorems.</li><li>• Use the Squeeze Theorem to find limits.</li></ul>	<ul style="list-style-type: none"><li>• Find the limits of various types of functions.</li><li>• Use the Squeeze Theorem to verify the value of limits.</li></ul>
C2L4 – Continuity and its Consequences	<ul style="list-style-type: none"><li>• Determine the continuity of a function at a given point.</li><li>• Use continuity properties to determine the continuity of a function or a composition of functions at a given point.</li><li>• Use the Intermediate Value Theorem to determine the zeros of a function.</li></ul>	<ul style="list-style-type: none"><li>• Apply the concept of continuity for various types of functions.</li><li>• Apply the Intermediate Value Theorem.</li></ul>

**Week 5: Sept. 26 – 30, 2022**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C2L5 – Limits Involving Infinity; Asymptotes	<ul style="list-style-type: none"><li>• Find limits at infinity and limits that are infinite.</li><li>• Find horizontal, vertical, and slant asymptotes using limits.</li></ul>	<ul style="list-style-type: none"><li>• Identify types of asymptotes for rational functions.</li><li>• Find the limits at infinity.</li></ul>

**Week 6: Oct. 3 – 7, 2022****Chapter 3 – Differentiation**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C3L1 – Tangent Lines and Velocity	<ul style="list-style-type: none"><li>• Understand the link between the slope of a tangent line and a non-tangent line to a graph geometrically.</li><li>• Write the equation of a tangent line to a graph at a given point using limits.</li><li>• Find the average velocity and the instantaneous velocity at a given point.</li><li>• Solve mathematical and real-life problems using derivatives.</li></ul>	<ul style="list-style-type: none"><li>• Apply limits to find slopes and equations of tangent lines to various functions.</li><li>• Find rates of change.</li><li>• Find average and instantaneous velocity.</li></ul>
C3L2 – The Derivative	<ul style="list-style-type: none"><li>• Find the derivative of a function at a given point.</li><li>• Sketch the graph of a function using the graph of its derivative.</li><li>• Understand the relationship between continuity and differentiability.</li><li>• Determine the differentiability of a function at a given point.</li><li>• Estimate the derivative at a given point using tables.</li></ul>	<ul style="list-style-type: none"><li>• Find the derivative of a function at a given point and at an unspecified point.</li><li>• Sketch the graph of the first derivative of a function given the graph of the function.</li><li>• Prove continuity of a function by using the theorem of differentiation.</li><li>• Assess whether a function is differentiable by using the theorem of differentiation.</li></ul>

**Week 7: Oct. 10 – 14, 2022**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C3L3 – Computation of Derivatives: The Power Rule	<ul style="list-style-type: none"><li>• Find the derivative of a function at a given point using the Power Rule.</li><li>• Sketch the graph of a function using the graph of its derivative.</li><li>• Use differentiation rules and higher derivatives in solving real-life problems.</li></ul>	<ul style="list-style-type: none"><li>• Apply the Power Rule and the general derivative rule to find the first derivative of a function.</li><li>• Find the equation of the tangent line to a function.</li><li>• Find the <math>n</math>th derivative of a function.</li><li>• Apply the rules of differentiation to physics (displacement, velocity, and acceleration).</li></ul>
C3L4 – The Product and Quotient Rules	<ul style="list-style-type: none"><li>• Apply the Product Rule to find derivatives.</li><li>• Apply the Quotient Rule to find derivatives</li><li>• Solve real-life problems using the Product and Quotient Rules.</li></ul>	<ul style="list-style-type: none"><li>• Apply the Product Rule and the Quotient Rule to find derivatives.</li></ul>

**Week 8: Oct. 17 – 21, 2022**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C3L5 – The Chain Rule	<ul style="list-style-type: none"><li>• Apply the Chain Rule for differentiation.</li><li>• Find the derivative of an inverse function using the Chain Rule.</li></ul>	<ul style="list-style-type: none"><li>• Apply the Chain Rule to find derivatives.</li></ul>
C3L6 – Derivatives of Trigonometric Functions	<ul style="list-style-type: none"><li>• Find the derivatives of trigonometric functions using differentiation rules.</li><li>• Solve physical and engineering problems using derivatives of trigonometric functions.</li></ul>	<ul style="list-style-type: none"><li>• Find derivatives of trigonometric functions.</li></ul>

**Week 9: Oct. 24 – 28, 2022**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C3L7 – Derivatives of Exponential and Logarithmic Functions	<ul style="list-style-type: none"><li>• Find derivatives of exponential functions.</li><li>• Find derivatives of natural logarithmic functions.</li><li>• Solve real-life problems using derivatives of exponential and logarithmic functions.</li></ul>	<ul style="list-style-type: none"><li>• Find derivatives of exponential and logarithmic functions.</li></ul>
C3L8 – Implicit Differentiation and Inverse Trigonometric Functions	<ul style="list-style-type: none"><li>• Find derivatives implicitly.</li><li>• Use implicit differentiation to find derivatives of inverse trigonometric functions.</li><li>• Solve mathematical and real-life problems using implicit differentiation.</li></ul>	<ul style="list-style-type: none"><li>• Use implicit differentiation to find derivatives.</li><li>• Apply implicit differentiation to find derivatives of inverse trigonometric functions.</li></ul>

**Week 10: Oct. 31 – Nov. 4, 2022**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C3L10 – The Mean Value Theorem	<ul style="list-style-type: none"><li>• Understand Rolle's Theorem and use it in applications.</li><li>• Understand the Mean Value Theorem and use it in applications.</li></ul>	<ul style="list-style-type: none"><li>• Apply Rolle's Theorem.</li><li>• Apply the Mean Value Theorem.</li></ul>

**Week 11: Nov. 7 – 11, 2022****Chapter 4 – Applications of Differentiation**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C4L1 – Linear Approximation and Newton's Method	<ul style="list-style-type: none"><li>Find the linear approximation of a function at a given point.</li><li>Use Newton's method to approximate the zeros of a given function.</li></ul>	<ul style="list-style-type: none"><li>Find the linear approximation of different types of functions.</li><li>Use linear approximation to perform linear interpolation.</li><li>Use Newton's method to approximate zeros of functions.</li></ul>

**Week 12: Nov. 14 – 18, 2022**

<b>Lessons</b>	<b>Student Learning Outcomes</b>	<b>MOE Standards</b>
C4L2 – Indeterminate Forms and L'Hôpital's Rule	<ul style="list-style-type: none"><li>Understand l'Hôpital's rule and identify the cases where it can be applied.</li><li>Use l'Hôpital's rule to compute limits.</li></ul>	<ul style="list-style-type: none"><li>Apply L'Hôpital's Rule to find limits involving the various indeterminate forms.</li></ul>

**Week 13: Nov. 21 – 25, 2022****Week 14: Nov. 28 – Dec. 2, 2022****Week 15: Dec. 5 – 9, 2022**

**Term 1 Revision and End-of-Term Exam**  
**Exam date to be determined by the Assessment Directorate**