IB DP IB Mathematics Analysis and approaches SL (IB2)

📑 Summary

SL - Chapter 10 - Integration

Subject	Year	Start date	Duration
Mathematics: analysis and approaches	IB2	Week 3, September	4 weeks

Course Part

Description
In this unit you will explore indefinite and definite integrals and using integration to find areas under curves.

📚 Inquiry & Purpose

? Inquiry / Higher Order Questions

Type	Inquiry Questions
Skills-based	How can you modify the formula for area under and curve to area between two curves?
Content-based	When given a derivative of a function what else is required to find the original function?

🔍 Curriculum

⊕ Aims

Employ and refine their powers of abstraction and generalization

◇ Objectives

Inquiry approaches: Investigate unfamiliar situations, both abstract and from the real world, involving organizing and analyzing information, making conjectures, drawing conclusions, and testing their validity.

📖 Syllabus Content

SL 5.5

Introduction to integration as anti-differentiation of functions of the form $f(x) = ax^n + bx^{n-1} + \ldots$, where $n \in \mathbb{Z}, \quad n \neq -1$

Anti-differentiation with a boundary condition to determine the constant term.

Definite integrals using technology.

Area of a region enclosed by a curve $y = f(x)$ and the x -axis, where $f(x) > 0$.

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SL 5.11

Definite integrals, including analytical approach.

Areas of a region enclosed by a curve $y = f(x)$ and the x-axis, where $f(x)$ can be positive or negative, without the use of technology.

Areas between curves.

📑 ATL Skills

👨‍🏫 Approaches to Learning

⚙️ **Thinking**

- In this unit, we will

  reward a new personal understanding, solution or approach to an issue

  set students a task which required higher-order thinking skills (such as analysis or evaluation)

  build on a specific prior task

  include a reflection activity

👨‍💼 Developing IB Learners

⭐ Learner Profile

🔍   Inquirers

📚   Knowledgeable

💡   Thinkers

🏔️   Risk-takers (Courageous)

🗿   Reflective