

Introduction of

MATHEMATICAL STUDIES

(STANDARD LEVEL)

What is DP ?

- Pre-university course of studies
- Two-year curriculum
- **Six** academic areas (subject groups)
- Select **ONE** from **EACH GROUP**
- 3 at **HIGH LEVEL(HL)** & 3 at **STANDARD LEVEL (SL)**
- 3 **CORE** Elements:
 - > Extended Essay (**EE**)
 - > Theory of Knowledge (**TOK**)
 - > Creativity, Action & Service (**CAS**)
- Group **5: MATHEMATICS & COMPUTER SCIENCE**

Extended Essay (EE)

- ◉ In-depth analysis of a **topic**
- ◉ Topic related to **students' interest**
- ◉ **4000** words in length
- ◉ **Latter half of 1st yr** until **Oct/Nov of 2nd yr**
- ◉ Marked **externally**

Theory of Knowledge (TOK)

- ◉ Developing an appreciation of **alternative points of view**
- ◉ Understanding complicated **problems associated with knowledge**
- ◉ **1st part:**
 - > **1200-1600** word essay
 - > By the **end** of the course
 - > Assessed **externally**
 - > **2/3** of total marks
- ◉ **2nd part:**
 - > **presentation** on the topic
 - > **2nd yr**
 - > assessed **internally**
 - > **1/3** of total marks

Creativity, Action & Service (CAS)

- Creativity
 - Any activities showing your **creativity**
- Action
 - Involvement in **Physical Activities**
- Service
 - Involvement in **community** or **social service**
- Making positive contributions to a student's own development, self-awareness & responsibility
- At least **150 hrs** of CAS
- Within **18-month** period

Group 5: Mathematics

- Mathematics **HL**
- Mathematics **SL**
- Mathematical Studies **SL**
- **DIFFERENCE** between 3 courses

> Students who choose **Maths HL**

- ↳ Good **foundation** in Maths
- ↳ Strong **interest** in Maths
- ↳ Including Maths as a **major component** of **university studies** (e.g. Physics, Engineering)
- ↳ **External** assessment : **3 written papers (30%,30%,20%)**
- ↳ **Internal** assessment: **1 Portfolio (20%)**

> Students who choose **Maths SL**

- ↳ **Sound** Maths background
- ↳ Applying maths knowledge to solve realistic problems
- ↳ Applicable to future university studies, such as **chemistry, economics, psychology & business**
- ↳ **External** assessment : **2 written papers (40%@)**
- ↳ **Internal** assessment: **1 Portfolio (20%)**

> Students who choose **Maths STUDIES**

- ↳ Interests in subjects **outside** of Maths
- ↳ **Not** Applying maths in future studies
- ↳ **Appreciation** for Maths in relation to the world
- ↳ Providing you with adequate preparation & understanding in Maths to excel in further studies whether Maths based on or not

Teaching Topics of Maths Studies SL (MST)

- **Introduction to the GDC** (integrated throughout)
 - **Introductory Differential Calculus**
 - **Statistics**
 - **Number & Algebra**
-
- **Set, Logic & Probability**
 - **Geometry & Trigonometry**
 - **Mathematical Models**

Assessments

○ External

- > **PAPER 1** → 1.5 HRS
- 15 SQ, 6 MARKS@
- TOTALLY 90 MARKS
- 40%

- > **PAPER 2** → 1.5 HRS
- 6 EQ
- TOTALLY 90 MARKS
- 40%

○ Internal

- > **PROJECT (ASSIGNED DURING Y11)**
 - in form of modeling, investigations, applications or statistical surveys
 - Assessed **internally** based on rubric broken down into **7 specific criteria**
 - Criteria **A** : Introduction
 - Criteria **B** : Information/Measurement
 - Criteria **C** : Mathematical Processes
 - Criteria **D** : Interpretation of Results
 - Criteria **E** : Validity
 - Criteria **F** : Structure & Communication
 - Criteria **G** : Commitment
 - 20%

Sequence of Teaching Topics

1. TOPIC 4: **Functions**
2. TOPIC 2: **Number & Algebra**
3. TOPIC 3: **Set, Logic & Probability**
4. TOPIC 5: **Geometry & Trigonometry**
5. TOPIC 6: **Statistics**
6. TOPIC 7: **Introductory Differential Calculus**
7. TOPIC 8: **Financial Maths**

Schedule

Topic	Time Allocation	Period of Time
Introductory of Differential Calculus	18 hrs	27/8 – 19/10
Statistics	29 hrs	29/10-30/11 & 3/12-1/2
Number and Algebra & Project	40 hrs	13/2– 21/6
NEXT YEAR		
Sets, Probability and Logic	24 hrs	To be confirmed
Geometry and Trigonometry	18 hrs	
Mathematical Models	20 hrs	

Resources

- **Website**
- **Textbook**
- **Binder**