

Diploma Programme Course Outline

Name of the DP subject

Computer Science (COS)

Higher - HL
Term 1

Standard - SL
Term 2

- Both SL and HL students are taught in the same class.
- The last semester has been kept down due to revision and the exams.
- Group 4 project is based on models that are used in some schools

YEAR 1

UNIT/TOPIC	TOPIC/CONCEPT	Month	ASSESSMENT COMPONENTS
<ul style="list-style-type: none"> • Topic # 1 	<p>SL/HL core:</p> <ul style="list-style-type: none"> • 1.1 - System Fundamentals <ul style="list-style-type: none"> ○ Planning & system installation <ul style="list-style-type: none"> ▪ 1.1.1 - 1.1.7 ○ User Focus <ul style="list-style-type: none"> ▪ 1.1.8 - 1.1.10 ○ System Backup <ul style="list-style-type: none"> ▪ 1.1.11 - 1.1.13 ○ System Deployment <ul style="list-style-type: none"> ▪ 1.1.14 	<p>August</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ IA
<ul style="list-style-type: none"> • Topic # 1 • Topic # 4 • Object Oriented Programming 	<p>SL/HL core:</p> <ul style="list-style-type: none"> • 1.2 - System Design Basic <ul style="list-style-type: none"> ○ Components of a computer <ul style="list-style-type: none"> ▪ 1.2.1 - 1.2.2 • 1.2 - System Design Basic <ul style="list-style-type: none"> ○ System design & analysis <ul style="list-style-type: none"> ▪ 1.2.4 - 1.2.10 ○ Human interaction with system <ul style="list-style-type: none"> ▪ 1.2.12 - 1.2.15 	<p>September</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ IA

	<ul style="list-style-type: none"> • 4.3 Intro to programming <ul style="list-style-type: none"> ○ Nature of programming language <ul style="list-style-type: none"> ▪ 4.3.1– 4.3.5 <p>SL/HL option core: OOP</p> <ul style="list-style-type: none"> • D 1 (all) Objects as a programming concept 		
<ul style="list-style-type: none"> • Topic # 2 • Topic # 4 • Object Oriented Programming 	<p>SL/HL core:</p> <ul style="list-style-type: none"> • 1.2 - System Design Basic <ul style="list-style-type: none"> ○ Human interaction with system <ul style="list-style-type: none"> ▪ 1.2.12 - 1.2.15 • 2.1 - Computer Organization <ul style="list-style-type: none"> ○ Computer architecture <ul style="list-style-type: none"> ▪ 2.1.1 - 2.1.4 ○ Secondary memory <ul style="list-style-type: none"> ▪ 2.1.5 • 4.3 Intro to programming <ul style="list-style-type: none"> ○ Nature of programming language <ul style="list-style-type: none"> ▪ 4.3.1– 4.3.5 <p>SL/HL option core: OOP</p> <ul style="list-style-type: none"> • D 1 (all) Objects as a programming concept • D 3.1–D 3.5 Program development 	<p>October</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ IA
<ul style="list-style-type: none"> • Topic # 2 • Topic # 4 • Object Oriented Programming 	<p>SL/HL core:</p> <ul style="list-style-type: none"> • 2.1 - Computer Organization <ul style="list-style-type: none"> ○ Operating system & application systems <ul style="list-style-type: none"> ▪ 2.1.6 - 2.1.8 ○ Binary representation <ul style="list-style-type: none"> ▪ 2.1.9 - 2.1.10 ○ Simple logic gates <ul style="list-style-type: none"> ▪ 2.1.11 - 2.1.13 • 4.3 Intro to programming <ul style="list-style-type: none"> ○ Nature of programming language <ul style="list-style-type: none"> ▪ 4.3.1– 4.3.5 <p>SL/HL option core: OOP</p> <ul style="list-style-type: none"> • D 1 (all) Objects as a programming concept • D 3.1–D 3.5 Program development 	<p>November</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ IA

<ul style="list-style-type: none"> • Topic # 2 • Topic # 4 • Object Oriented Programming 	<p>SL/HL core:</p> <ul style="list-style-type: none"> • - Computer Organization <ul style="list-style-type: none"> ○ Binary representation <ul style="list-style-type: none"> ▪ 2.1.9 - 2.1.10 ○ Simple logic gates <ul style="list-style-type: none"> ▪ 2.1.11 - 2.1.13 <p>4.3 Intro to programming</p> <ul style="list-style-type: none"> ○ Use of programming languages <ul style="list-style-type: none"> ▪ 4.3.6– 4.3.9 <p>SL/HL option core: OOP</p> <ul style="list-style-type: none"> • D 1 (all) Objects as a programming concept • D 3.1–D 3.5 Program development 	December	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ IA
<ul style="list-style-type: none"> • Topic # 2 • Topic # 4 • Object Oriented Programming • Case Study 	<p>Integrated topics /Core</p> <ul style="list-style-type: none"> ▪ 4.1 General principles <ul style="list-style-type: none"> ○ Thinking procedurally <ul style="list-style-type: none"> ▪ 4.1.1 - 4.1.3 ○ Thinking logically <ul style="list-style-type: none"> ▪ 4.1.4 - 4.1.8 ▪ 4.2 Connecting computational thinking <ul style="list-style-type: none"> ○ 4.2.1 – 4.2.4 <p>SL/HL option core: OOP</p> <ul style="list-style-type: none"> • D 2.1–D 2.6 Features of OOP • D 3.1–D 3.5 Program development <p>HL</p> <p>Case study</p> <ul style="list-style-type: none"> • Introduction to Case study 	January	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ Paper 3 ▪ IA
<ul style="list-style-type: none"> • Topic # 4 • Object Oriented Programming • Case Study 	<p>SL/HL core:</p> <p>Integrated topics</p> <ul style="list-style-type: none"> ▪ 4.1 General principles <ul style="list-style-type: none"> ○ Thinking ahead <ul style="list-style-type: none"> ▪ 4.1.9 - 4.1.13 ○ Thinking concurrently <ul style="list-style-type: none"> ▪ 4.1.14 - 4.1.16 ▪ 4.2 Connecting computational thinking <ul style="list-style-type: none"> ○ 4.2.5 – 4.2.9 <p>SL/HL option core: OOP</p>	February	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ Paper 3 ▪ IA

	<ul style="list-style-type: none"> ▪ D 2.1–D 2.6 Features of OOP ▪ D 3.6–D 3.8 Program development <p>HL Case study</p> <ul style="list-style-type: none"> • 2017-2018 		
<ul style="list-style-type: none"> • Topic # 4 • Topic # 5 • Object Oriented Programming • Case Study 	<p>SL/HL core:</p> <ul style="list-style-type: none"> ▪ 4.1 General principles <ul style="list-style-type: none"> ○ Thinking abstractly <ul style="list-style-type: none"> ▪ 4.1.17 - 4.1.20 ▪ 4.2 Connecting computational thinking <ul style="list-style-type: none"> ○ 4.21 – 4.2.9 <p>SL/HL option core: OOP</p> <ul style="list-style-type: none"> ▪ D 2.1–D 2.6 Features of OOP ▪ D 3.6–D 3.8 Program development <p>HL</p> <ul style="list-style-type: none"> ▪ 5.1 Abstract data structures ▪ Thinking recursively <ul style="list-style-type: none"> ○ 5.1.1–5.1.3 <p>Case study</p> <ul style="list-style-type: none"> • 2019 & 2020 	<p>March</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ Paper 3 ▪ IA
<ul style="list-style-type: none"> • Topic # 4 • Topic # 5 • Object Oriented Programming • Case Study 	<p>SL/HL core:</p> <ul style="list-style-type: none"> ▪ 4.3 Intro to programming <ul style="list-style-type: none"> ○ Use of programming languages <ul style="list-style-type: none"> ▪ 4.3.10– 4.3.13 <p>SL/HL option core: OOP</p> <ul style="list-style-type: none"> ▪ D 2.1–D 2.6 Features of OOP ▪ D 3.6–D 3.8 Program development <p>HL</p> <ul style="list-style-type: none"> ▪ 5.1 Abstract data structures <ul style="list-style-type: none"> ○ Abstract data structures <ul style="list-style-type: none"> ▪ 5.1.4–5.1.10 ○ Linked Lists <ul style="list-style-type: none"> ▪ 5.1.11–5.1.13 <p>Case study</p> <ul style="list-style-type: none"> • 2022 & 2023 	<p>April</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ Paper 3 ▪ IA

<ul style="list-style-type: none"> • Topic # 1 • Topic # 2 • Topic # 4 • Topic # 5 • Object Oriented Programming 	<p>Review</p> <ul style="list-style-type: none"> • Topic 1 • Topic 2 • Topic 4 • OOP • Case Study <p style="text-align: center;">Final Exams</p>	<p style="text-align: center;">May</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ Paper 3 ▪ IA
<ul style="list-style-type: none"> • Topic # 1 • Topic # 2 • Topic # 4 • Topic # 5 • Object Oriented Programming 	<p style="text-align: center;">Final Exams</p>	<p style="text-align: center;">June</p>	<ul style="list-style-type: none"> ▪ Paper 1 ▪ Paper 2 ▪ Paper 3 ▪ IA

All Diploma Programme courses are designed as two-year learning experiences.