

## Diploma Program Outline (2025-2027)

### Design Technology SL and HL

Week	Week of...	Topic / Unit / Text	Content / Skill Development	Graded Assessments
<b>Year 1 Semester 1</b>				
1	August 18	Introduction to Curriculum	<ul style="list-style-type: none"> <li>Curriculum Structure</li> <li>Difference Between HL and SL</li> <li>Academic Requirements</li> </ul>	
2	August 25	Unit 1: The Design Process	<ul style="list-style-type: none"> <li>B 2.1 The Design Process</li> <li>The stages of the design process: Empathize, Define, Ideate, Prototype, Test.</li> <li>The difference between primary and secondary research</li> <li>qualitative vs. quantitative data.</li> </ul>	
3	September 2	Unit 1: The Design Process	<ul style="list-style-type: none"> <li>C 1.1 Responsibility of Designer</li> <li>The ethical role of the designer</li> <li>Safety</li> <li>Obsolescence (planned, functional, etc.)</li> <li>Impact on community/environment.</li> </ul>	Summative Test 1
4	September 8	Unit 2: Understanding Users	<ul style="list-style-type: none"> <li>A 1.1 Ergonomics</li> <li>Human factors - anthropometrics (percentiles, adjustability)</li> <li>physiology (limitations)</li> <li>psychology (senses)</li> </ul>	
5	September 15	Unit 2: Understanding Users	<ul style="list-style-type: none"> <li>A2.1 User-Centred Research Methods</li> <li>Interviews, surveys, focus groups, observation</li> </ul>	
6	September 22	Unit 2: Understanding Users	<ul style="list-style-type: none"> <li>B1.1 User-Centred Design</li> <li>Developing user personas and scenarios</li> </ul>	Summative Test 2
7	September 29	National Holiday		
8	October 6	Unit 3: Inclusive Design	<ul style="list-style-type: none"> <li>C 1.2 Inclusive Design</li> <li>Principles of designing for the widest possible audience, including those with impairments.</li> <li>Design for extremes.</li> </ul>	
9	October 13	Unit 3: Inclusive Design	<ul style="list-style-type: none"> <li>C1.3 Beyond Usability (HL)</li> <li>Frameworks for creating emotional connections with products</li> <li>ACT Model</li> <li>Four Pleasure Model</li> </ul>	
10	October 20	Unit 4: Product Analysis	<ul style="list-style-type: none"> <li>C3.1 Product Analysis &amp; Evaluation</li> <li>Methods for deconstructing and evaluating existing products (e.g., SWOT analysis).</li> </ul>	
11	October 27	Unit 4: Product Analysis	<ul style="list-style-type: none"> <li>C3.1 Product Analysis &amp; Evaluation</li> <li>Identifying stakeholders and their perspectives.</li> <li>The concept of "constructive discontent" – finding opportunities for improvement.</li> </ul>	Summative Test 3
12	November 3	Unit 5: Materials	<ul style="list-style-type: none"> <li>A3.1 Material Classification &amp; Properties</li> <li>Classifying materials (natural, human-made, composites, smart materials)</li> <li>Understanding physical, chemical, and mechanical properties.</li> </ul>	
13	November 10	Unit 5: Materials	<ul style="list-style-type: none"> <li>B3.1 Material Selection</li> <li>Factors influencing material selection:</li> <li>Properties, Aesthetics, Cost, Availability, Sustainability.</li> </ul>	
14	November 17	Revision and IA	<ul style="list-style-type: none"> <li><b>Introduction to IA – Cr. A</b></li> </ul>	Summative test 4
15	November 24	Week Without Wall		
16	December 1	Unit 6: Prototyping & Communication	<ul style="list-style-type: none"> <li>A2.2 Prototyping Techniques</li> <li>Low Fidelity Models</li> <li>Sketching</li> </ul>	
17	December 8	Unit 6: Prototyping & Communication	<ul style="list-style-type: none"> <li>A2.2 Prototyping Techniques</li> <li>Mid Fidelity Models</li> <li>High Fidelity Models</li> </ul>	
18	December 15	Unit 6: Prototyping & Communication	<ul style="list-style-type: none"> <li>Revision</li> </ul>	Summative Test 5
19	December 22	Christmas & New Year		
20	December 30	Christmas & New Year		
21	January 5	Unit 6: Prototyping & Communication	<ul style="list-style-type: none"> <li>B2.2 Modelling &amp; Prototyping</li> <li>CAD modelling</li> </ul>	
22	January 12	Unit 6: Prototyping &	<ul style="list-style-type: none"> <li>B2.2 Modelling &amp; Prototyping</li> </ul>	

Week	Week of...	Topic / Unit / Text	Content / Skill Development	Graded Assessments
		<b>Communication</b>	<ul style="list-style-type: none"> <li>Finite Element Analysis (FEA)</li> </ul>	
<b>23</b>	<b>January 19</b>	<b>Unit 6: Prototyping &amp; Communication</b>	<ul style="list-style-type: none"> <li>B2.2 Modelling &amp; Prototyping</li> <li>Rapid prototyping</li> </ul>	<b>Submission of Cr. A</b>
<b>Year 1 Semester 2</b>				
<b>1</b>	<b>January 26</b>	<b>Revision and IA</b>	<ul style="list-style-type: none"> <li>Revision/Practice of Modelling</li> <li>Sketching/CAD Modelling/Prototyping</li> <li><b>Introduction to Cr. B of IA</b></li> </ul>	
<b>2</b>	<b>February 2</b>	<b>Unit 6: Prototyping &amp; Communication</b>	<ul style="list-style-type: none"> <li>Revision/Practice of Modelling</li> <li>Sketching/CAD Modelling/Prototyping</li> </ul>	
<b>3</b>	<b>February 9</b>	<b>Unit 6: Prototyping &amp; Communication</b>	<ul style="list-style-type: none"> <li>Revision/Practice of Modelling</li> <li>Sketching/CAD Modelling/Prototyping</li> </ul>	Summative Test 6
<b>4</b>	<b>February 16</b>	<b>Chinese New Year</b>		
<b>5</b>	<b>February 23</b>	<b>Chinese New Year</b>		
<b>6</b>	<b>March 2</b>	<b>Unit 7: Sustainable Design</b>	<ul style="list-style-type: none"> <li>C2.1 Design for Sustainability</li> <li>Principles of sustainable design</li> <li>Triple Bottom Line Approach</li> </ul>	
<b>7</b>	<b>March 9</b>	<b>Unit 7: Sustainable Design</b>	<ul style="list-style-type: none"> <li>C2.2 Design for a Circular Economy</li> <li>Linear vs. Circular Economy models</li> </ul>	
<b>8</b>	<b>March 16</b>	<b>Unit 7: Sustainable Design</b>	<ul style="list-style-type: none"> <li>C3.2 Life-Cycle Analysis (HL)</li> <li>The "cradle-to-grave" stages of a Life-Cycle Analysis (LCA)</li> </ul>	
<b>9</b>	<b>March 23</b>	<b>Revision and IA</b>	<ul style="list-style-type: none"> <li>Working on IA</li> </ul>	Summative Test 7
<b>10</b>	<b>March 30</b>	<b>Revision and IA</b>	<ul style="list-style-type: none"> <li>Working on IA</li> </ul>	<b>Submission of Cr. B</b>
<b>11</b>	<b>April 6</b>	<b>Easter Holiday</b>		
<b>12</b>	<b>April 13</b>	<b>Unit 8: Manufacturing</b>	<ul style="list-style-type: none"> <li>A4.1 Manufacturing Techniques</li> <li>Manufacturing techniques</li> <li>Additive Techniques</li> <li>Subtractive</li> </ul>	
<b>13</b>	<b>April 20</b>	<b>Unit 8: Manufacturing</b>	<ul style="list-style-type: none"> <li>A4.1 Manufacturing Techniques</li> <li>Forming</li> <li>Joining</li> <li>Finishing.</li> </ul>	
<b>14</b>	<b>April 27</b>	<b>Unit 8: Manufacturing</b>	<ul style="list-style-type: none"> <li>B4.1 Production Systems</li> <li>Production systems: craft, batch, mass, automated.</li> </ul>	
<b>15</b>	<b>May 4</b>	<b>Unit 8: Manufacturing</b>	<ul style="list-style-type: none"> <li>C4.1 Design for Manufacture Strategies (HL)</li> <li>Design for Manufacture (DfM) strategies</li> <li>Design for process</li> <li>Design for Assembly</li> <li>Design for disassembly.</li> </ul>	Summative Test 8
<b>16</b>	<b>May 11</b>	<b>Revision and IA</b>	<ul style="list-style-type: none"> <li>Working on IA</li> </ul>	
<b>17</b>	<b>May 18</b>	<b>Revision and IA</b>	<ul style="list-style-type: none"> <li>Working on IA</li> </ul>	<b>Submission of Cr. C</b>
<b>18</b>	<b>May 25</b>	<b>Final Exam Week</b>		
<b>19</b>	<b>June 1</b>	<b>Internal Assessment</b>	<ul style="list-style-type: none"> <li>Improving IA</li> </ul>	
<b>20</b>	<b>June 8</b>	<b>Internal Assessment</b>	<ul style="list-style-type: none"> <li>Improving IA</li> </ul>	
<b>21</b>	<b>June 15</b>	<b>Collaborative Science Project</b>		
<b>Year 2 Semester 1</b>				
<b>1</b>	<b>August</b>	Review of IA	<ul style="list-style-type: none"> <li>Review the Status of IA</li> <li>Introduce Cr. D</li> </ul>	
<b>2</b>	<b>August</b>	Unit 9: Structural Systems (HL)	<ul style="list-style-type: none"> <li>A3.2 Intro to Structural Systems</li> <li>Types of structures: frame, shell, solid.</li> <li>Forces acting on structures: tension, compression, shear, torsion, bending.</li> </ul>	
<b>3</b>	<b>September</b>	Unit 9: Structural Systems (HL)	<ul style="list-style-type: none"> <li>B3.2 Structural Systems Application &amp; Selection</li> <li>Stress-strain graphs</li> <li>Young's Modulus</li> <li>Safety Factors (SF)</li> </ul>	
<b>4</b>	<b>September</b>	Unit 10: Mechanical Systems (HL)	<ul style="list-style-type: none"> <li>A3.3 Intro to Mechanical Systems</li> <li>Types of motion: linear, rotary, oscillating, reciprocating</li> <li>Components: gears, pulleys, cams, levers, linkages.</li> </ul>	
<b>5</b>	<b>September</b>	Unit 10: Mechanical Systems (HL)	<ul style="list-style-type: none"> <li>B3.3 Mechanical Systems Application &amp; Selection</li> <li>mechanical advantage</li> <li>velocity ratio</li> <li>efficiency.</li> </ul>	Summative Test
<b>6</b>	<b>September</b>	Revision and IA	<ul style="list-style-type: none"> <li><b>Review of IA</b></li> </ul>	

Week	Week of...	Topic / Unit / Text	Content / Skill Development	Graded Assessments
7	October	National Holiday		
8	October	Unit 11: Electronic Systems	<ul style="list-style-type: none"> <li>A3.4 Intro to Electronic Systems</li> <li>Electronic system components: inputs, processes, outputs, feedback</li> <li>Analogue vs. digital systems</li> </ul>	
9	October	Unit 11: Electronic Systems	<ul style="list-style-type: none"> <li>B3.4 Electronic Systems Application &amp; Selection</li> <li>Circuit diagrams</li> <li>Microcontrollers</li> <li>Sensors</li> </ul>	
10	October	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	Summative Test
11	October	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	Submission of Cr. D
12	November	Revision and IA	<ul style="list-style-type: none"> <li>Introduce Cr. E</li> </ul>	
13	November	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	
14	November	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	
15	November	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	
16	December	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	First Draft of IA
17	December	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	
18	December	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	
19	December	Christmas & New Year		
20	January	Christmas & New Year		
21	January	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	
<b>Year 2 Semester 2</b>				
1	January	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	
2	January	Revision and IA	<ul style="list-style-type: none"> <li>Revision and IA</li> </ul>	Final Draft Submission IA
3	January	Chinese New Year		
4	February	Chinese New Year		
5	February	DP Mock Examination Review		
6	February	DP Mock Examination		
7	February	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
8	March	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
9	March	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
10	March	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
11	March	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
12	March	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
13	March	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
14	April	Easter Holiday		
15	April	Revision	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
16	April - May	IB DP May Examination		