

## 2021 Semester Plan

### Sec 3N – Design & Technology

Term 1	Topic	Remarks
Week 1	<ol style="list-style-type: none"> <li>1. Subject Routines and Coursework Essentials</li> <li>2. Basic Sketching: Cube Manipulation.</li> <li>3. Basic Sketching: Cube Manipulation</li> </ol>	
Week 2	<ol style="list-style-type: none"> <li>1. Searching for and Understanding Design Opportunities</li> <li>2. Basic Sketching: Crating Techniques</li> <li>3. Basic Sketching: Crating Techniques</li> </ol>	CNY
Week 3	<ol style="list-style-type: none"> <li>1. Needs Definition / Research: DS,DB, DC</li> <li>2. Basic Sketching: Drawing organic shapes and forms</li> <li>3. Basic Sketching: Drawing organic shapes and forms (use of underlays)</li> </ol>	
Week 4	<ol style="list-style-type: none"> <li>1. Research: Design Factors, Product Analysis</li> <li>2. Basic Sketching: Product Sketching - Shape Borrowing</li> <li>3. Basic Sketching: Product Sketching - Shape Borrowing (use of underlays)</li> </ol>	
Week 5	<ol style="list-style-type: none"> <li>1. Research: User, Environment, Data Collection</li> <li>2. Basic Sketching: Developmental Sketches</li> <li>3. Basic Sketching: Developmental Sketches</li> </ol>	
Week 6	<ol style="list-style-type: none"> <li>1. Research: Sustainability</li> <li>2. Basic Sketching: Product Sketching</li> <li>3. Basic Sketching: Product Sketching</li> </ol>	
Week 7	<ol style="list-style-type: none"> <li>1. Revision for Written Assessment 1</li> <li>2. Basic Sketching: Rendering (Pencil – Greyscale &amp; Colour)</li> <li>3. Basic Sketching: Rendering (Pencil – Greyscale &amp; Colour)</li> </ol>	<i>(Parent Updates)</i>
Week 8	<ol style="list-style-type: none"> <li>1. Written Assessment 1</li> <li>2. Practical Lesson: Pencil Case/Vertical File Organizer</li> <li>3. Practical Lesson: Pencil Case/Vertical File Organizer</li> </ol>	Practical Duration: 6 weeks (interchange)
Week 9	<ol style="list-style-type: none"> <li>1. Review of Written Assessment 1 and Research: Design Specifications</li> <li>2. Practical Lesson: Pencil Case/Vertical File Organizer</li> <li>3. Practical Lesson: Pencil Case/Vertical File Organizer</li> </ol>	
Week 10	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of Motions and Control Forces &amp; Motion</li> <li>2. Practical Lesson: Pencil Case/Vertical File Organizer</li> <li>3. Practical Lesson: Pencil Case/Vertical File Organizer</li> </ol>	
Term 2	Topic	
Week 1	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of Mechanisms and Their Applications</li> <li>2. Practical Lesson: Pencil Case/Vertical File Organizer</li> <li>3. Practical Lesson: Pencil Case/Vertical File Organizer</li> </ol>	
Week 2	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of Mechanisms and Their Applications</li> <li>2. Practical Lesson: Pencil Case/Vertical File Organizer</li> <li>3. Practical Lesson: Pencil Case/Vertical File Organizer</li> </ol>	<i>Good Fri</i>
Week 3	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of Mechanisms and Their Applications</li> <li>2. Practical Lesson: Pencil Case/Vertical File Organizer</li> <li>3. Practical Lesson: Pencil Case/Vertical File Organizer</li> </ol>	
Week 4	<ol style="list-style-type: none"> <li>1. Revision: Past Exam Papers and Key Points</li> <li>2. Practical Lesson: Pencil Case (cover/assembly)</li> <li>3. Practical Lesson: Pencil Case (cover/assembly)</li> </ol>	
Week 5	<ol style="list-style-type: none"> <li>1. Revision: Past Exam Papers and Key Points</li> </ol>	

	<ul style="list-style-type: none"> <li>2. Practical Lesson: Pencil Case (cover/assembly)</li> <li>3. Practical Lesson: Pencil Case (cover/assembly)</li> </ul>	
Week 6	<ul style="list-style-type: none"> <li>1. Revision: Past Exam Papers and Key Points</li> <li>2. Practical Lesson: Pencil Case (finishing for box)</li> <li>3. Practical Lesson: Pencil Case (finishing for box)</li> </ul>	
Week 7	<ul style="list-style-type: none"> <li>1. Revision for Written Assessment 2</li> <li>2. Mechatronics Desk Tidy Project: Design Model</li> <li>3. Mechatronics Desk Tidy Project: Gantt Chart</li> </ul>	<i>(Parent Updates)</i> <i>Labour Day</i>
Week 8	<ul style="list-style-type: none"> <li>1. Written Assessment 2</li> <li>2. Mechatronics Desk Tidy Project: Gantt Chart</li> <li>3. Mechatronics Desk Tidy Project: Gantt Chart</li> </ul>	<i>Hari Raya</i> <i>Puasa</i>
Week 9	<ul style="list-style-type: none"> <li>1. Review of Written Assessment 2 and Basic Electricity and Electronics: Voltage, Current Resistance, Circuits, Ohm's Law</li> <li>2. Mechatronics Desk Tidy Project: Topic Analysis</li> <li>3. Mechatronics Desk Tidy Project: Mind Map</li> </ul>	
Week 10	<b>Post Exam Activities</b>	<i>Vesak Day</i>
<b>Term 3</b>	<b>Topic</b>	
Week 1	<ul style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Circuits, Electrical Components</li> <li>2. Mechatronics Desk Tidy Project: Situation Analysis &amp; Design Factors</li> <li>3. Mechatronics Desk Tidy Project: Needs Analysis Presentation</li> </ul>	
Week 2	<ul style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Electrical components, Transistors</li> <li>2. Mechatronics Desk Tidy Project: Situation, Brief, Specifications</li> <li>3. Mechatronics Desk Tidy Project: Image / Mood Board</li> </ul>	<i>Youth Day</i>
Week 3	<ul style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Sensing circuits with transistors, thyristor</li> <li>2. Mechatronics Desk Tidy Project: Product Analysis</li> <li>3. Mechatronics Desk Tidy Project: Ideation (Shape Borrowing from "characters"), Form and Function Development</li> </ul>	
Week 4	<ul style="list-style-type: none"> <li>4. Basic Electricity and Electronics: Electrical components, Sensing circuits with transistors</li> <li>5. Mechatronics Desk Tidy Project: Situation, Brief, Specifications</li> <li>6. Mechatronics Desk Tidy Project: Image / Mood Board</li> </ul>	<i>Hari Raya</i> <i>Haji</i>
Week 5	<ul style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Timer circuits with capacitors, IC chip</li> <li>2. Mechatronics Desk Tidy Project: Form and Function Development, Developmental sketches</li> <li>3. Mechatronics Desk Tidy Project: Form and Function Development, Developmental sketches</li> </ul>	
Week 6	<ul style="list-style-type: none"> <li>1. Revision: Past Exam Papers and Key Points</li> <li>2. Mechatronics Desk Tidy Project: Modelling, Dimensioning</li> <li>3. Mechatronics Desk Tidy Project: Modelling, Dimensioning</li> </ul>	
Week 7	<ul style="list-style-type: none"> <li>1. Revision for Written Assessment 3</li> <li>2. Mechatronics Desk Tidy Project: Modelling, Dimensioning</li> <li>3. Mechatronics Desk Tidy Project: Working Drawing</li> </ul>	<i>(Parent Updates)</i> <i>National Day</i>
Week 8	<ul style="list-style-type: none"> <li>1. Written Assessment 3</li> <li>2. Mechatronics Desk Tidy Project: Construction of Artefact</li> </ul>	
Week 9	<ul style="list-style-type: none"> <li>1. Review of Written Assessment 3</li> <li>2. Mechatronics Desk Tidy Project: Construction of Artefact</li> </ul>	

Week 10	- Mechatronics Desk Tidy Project: Construction of Artefact Assembly of Parts	<i>Tr Day Holiday</i>
<b>Term 4</b>	<b>Topic</b>	<b>Practical</b>
Week 1	- Mechatronics Desk Tidy Project: Construction of Electronic Circuit / Mechanical System	
Week 2	1. Revision for End of Year Examination 2. Mechatronics Desk Tidy Project: Assembly of Electronic and Mechanical Parts	<i>(Parent Updates)</i>
Week 3	End of Year Examinations	
Week 4	End of Year Examinations	
Week 5	1. Review of EOY exam paper & key points. 2. Design Communication: Presentation Drawing 3. Design Communication: Presentation Drawing/Contextual Drawing	
Week 6	1. Design Communication: Contextual Drawing 2. Revision of Coursework Essentials: Theme Analysis 3. Revision of Coursework Essentials: Theme Mindmap	
Week 7-8	Head Start Programme: 1. Revision of Coursework Essentials: Interview 2. Revision of Coursework Essentials: Searching for Design Opportunities	<i>Deepavali</i>

*\*Please note that the topics might be subject to minor changes. Students will be updated accordingly.*

## Assessment

	<b>Weighting</b>	<b>Components</b>
WA1	15%	- *Written Test - Design Assignments
WA2	15%	- *Written Test - Design Assignments
WA3	15%	- *Written Test - Design Assignments
Final Exam	55%	- End of Year Examinations (Written) - Coursework (Design Journal, Mock Up and Prototype)