

## 2021 Semester Plan

### Sec 3T – Design & Technology

Term 1	Topic	Remarks
Week 1	<ol style="list-style-type: none"> <li>1. Coursework Essentials and Expectations/ Design Model wrt the Design Process.</li> <li>2. Basic Sketching: Cube Manipulation.</li> </ol>	
Week 2	<ol style="list-style-type: none"> <li>1. Discussion on given needs / Gantt Chart wrt the Design Process (ICT lesson with ipads)</li> <li>2. Basic Sketching; Crating Techniques</li> </ol>	
Week 3	<ol style="list-style-type: none"> <li>1. Discussion on given need (classroom): DS,DB - (ICT lesson with ipads wrt fan project)</li> <li>2. Basic Sketching; Drawing geometric shapes and items</li> </ol>	
Week 4	<ol style="list-style-type: none"> <li>1. Research Techniques: Methods on UEF – Part 1 (SLS lesson - chairs) (Design Considerations wrt to fan project)</li> <li>2. Sketching (Randomness &amp; Symmetry – Candle Light Holder)</li> </ol>	
Week 5	<ol style="list-style-type: none"> <li>1. Research Techniques: Methods on UEF – Part 2 (SLS lesson) (Research on user/environment wrt to fan project: Print, Internet, observations- pictures of user habits &amp; environment).</li> <li>2. Sketching (Randomness &amp; Symmetry – Candle Light Holder)</li> <li>3. Practical Lesson: (a) Wobble Bowl, (b) Candle Holder (wood lathe)</li> </ol>	
Week 6	<ol style="list-style-type: none"> <li>1. Research Techniques: Methods on UEF – Part 2 (Research on user/environment wrt to fan project: Print, Internet, observations- pictures of user habits &amp; environment)</li> <li>2. Sketching (Randomnes &amp; Symmetry – Candle Light Holder)</li> <li>3. Practical Lesson: (a) Wobble Bowl, (b) Candle Holder (wood lathe)</li> </ol>	<i>(Parent Updates)</i>
Week 7	<ol style="list-style-type: none"> <li>1. Research Techniques: Product Analysis – Part 3 (Research on function wrt to fan project)</li> <li>2. Practical Lesson: (a) Wobble Bowl, (b) Candle Holder (wood lathe)</li> </ol>	
Week 8	<ol style="list-style-type: none"> <li>1. WRITTEN ASSESSMENT 1</li> <li>2. Research Techniques: Data Collection (Relevant items) / Ergonomics / Consolidation/Presentation of data/info for decision making (Research on UEF wrt to fan project)</li> <li>3. Practical Lesson: (b) Candle Holder (wood lathe) (c) Pencil Case (wood joints)</li> </ol>	
Week 9	<ol style="list-style-type: none"> <li>1. Mechanisms: The different types of motions and using mechanisms to control motion and forces. Types of mechanisms and their applications</li> <li>2. Research Techniques / Specifications: Design consideration map – summary of information collected. (Research UEF wrt to fan project)</li> <li>3. Practical Lesson: (b) Candle Holder (wood lathe) (c) Pencil Case (wood joints)</li> </ol>	
Week 10	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of mechanisms and their applications</li> <li>2. Ideation: Use of Mood and Image Board</li> <li>4. Practical Lesson: (b) Candle Holder (wood lathe) (c) Pencil Case (wood joints)</li> </ol>	
Term 2	Topic	Remarks
Week 1	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of mechanisms and their applications</li> <li>2. Basic Sketching; Ideation – SCAMPER exercise</li> <li>5. Practical Lesson: (b) Candle Holder (wood lathe) (c) Pencil Case (wood joints)</li> </ol>	

Week 2	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of mechanisms and their applications</li> <li>2. Basic Sketching; Ideation – SCAMPER exercise</li> <li>6. Practical Lesson: (b) Candle Holder (wood lathe) (c) Pencil Case (wood joints)</li> </ol>	
Week 3	<ol style="list-style-type: none"> <li>1. Mechanisms: Types of mechanisms and their applications</li> <li>2. Basic Sketching; Ideation – SCAMPER exercise</li> <li>3. Practical Lesson: Pencil Case (wood joints)</li> </ol>	
Week 4	<ol style="list-style-type: none"> <li>1. Mechanisms: Summary, N Level Exam Questions</li> <li>2. Basic Sketching; Product Sketch</li> <li>7. Practical Lesson: (c) Pencil Case (wood joints)</li> </ol>	
Week 5	<ol style="list-style-type: none"> <li>1. Revision: Past exam papers and key points</li> <li>2. Basic Sketching; Product Sketch</li> <li>3. Practical Lesson: (c) Pencil Case (cover/ assembly)</li> </ol>	<i>(Parent Updates)</i>
Week 6	<ol style="list-style-type: none"> <li>1. Revision: Past exam papers and key points</li> <li>2. Basic Sketching; Product Sketch</li> <li>3. Practical Lesson: (c)Pencil Case (finishing)</li> </ol>	
Week 7	<ol style="list-style-type: none"> <li>1. Basic Colouring and Rendering</li> </ol>	
Week 8	<ol style="list-style-type: none"> <li>1. WEIGHTED ASSESSMENT 2</li> <li>2. Basic Colouring and Rendering</li> </ol>	
Week 9	<ol style="list-style-type: none"> <li>1. Desk Tidy Fan Project: Material Usage / Ideation (Shape Borrowing / SCAMPER), Form and Function Development</li> <li>2. Desk Tidy Fan Project: Ideation (Shape Borrowing / SCAMPER), Form and Function Development, Placement of tubes</li> </ol>	
Week 10	<ol style="list-style-type: none"> <li>1. Desk Tidy Fan Project: Ideation (Shape Borrowing / SCAMPER), Form and Function Development, Placement of tubes</li> </ol>	
<b>Term 3</b>	<b>Topic</b>	
Week 1	<ol style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Voltage, Current Resistance, Circuits, Ohm's Law</li> <li>2. Desk Tidy Fan Project: Ideation (Shape Borrowing from "nature and man-made structures"), Form and Function Development, Placement of tubes</li> <li>3. Desk Tidy Fan Project: Ideation with Modelling</li> </ol>	
Week 2	<ol style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Circuits, Electrical Components</li> <li>2. Desk Tidy Fan Project: Ideation with Modelling</li> <li>3. Desk Tidy Fan Project: Presentation Drawing with colouring</li> </ol>	
Week 3	<ol style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Electrical components, Sensing circuits with transistors</li> <li>2. Desk Tidy Fan Project: Presentation Drawing with colouring</li> </ol>	Hari Raya Haji
Week 4	<ol style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Sensing circuits with transistors, thyristor</li> <li>2. Desk Tidy Project: Modelling, Dimensioning</li> </ol>	
Week 5	<ol style="list-style-type: none"> <li>1. Basic Electricity and Electronics: Timer circuits with capacitors, IC chip</li> <li>2. Desk Tidy Project: Modelling, Dimensioning / Material List</li> </ol>	
Week 6	<ol style="list-style-type: none"> <li>1. Desk Tidy Project: Orthographic Projection / Working Drawings</li> </ol>	<i>(Parent Updates)</i>
Week 7	<ol style="list-style-type: none"> <li>1. Revision: Past exam papers and key points</li> <li>2. Desk Tidy Project: Prototyping</li> </ol>	National Day

Week 8	Weighted Assessment 3 Practical Lesson: Desk Tidy Fan	
Week 9	1. Revision: Past exam papers and key points 2. Desk Tidy Project: Prototyping	
Week 10	1. Revision: Past exam papers and key points 2. Desk Tidy Project: Prototyping	Tr Day Holiday
<b>Term 4</b>	<b>Topic</b>	<b>Practical</b>
Week 1	1. Revision: Past exam papers and key points 2. Desk Tidy Project: Prototyping, Electronic circuit construction	
Week 2	1. Revision: Past exam papers and key points 2. Desk Tidy Project: Prototyping, Electronic circuit construction	<i>(Parent Updates)</i>
Week 3	<b>End of Year Examinations</b>	
Week 4	<b>End of Year Examinations</b>	
Week 5	1. Review of EOY exam paper & key points.	
Week 6-7	Head Start Programme - S4 Coursework Project Gantt Chart - Basic Google Sketch Up Exercise	

*\*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)