

YISHUN SECONDARY SCHOOL

Subject & Code: Design & Technology (7059) / (7055) / (7053)

Level & Stream: Secondary 3 G3 (7059); Secondary 3 G2 (7055); Secondary 3 G1 (7053)

The Curriculum and Approaches to Learning		Key Programmes / Competitions
<p>In line with the requirements of the Design and Technology (D&amp;T) Upper Sec 2019 Syllabus, the teaching of D&amp;T at YSS focuses on educating students as persons through the development of cognitive skills and abilities unique in the field of design.</p> <p>D&amp;T education aims to nurture in the students a way of thinking and doing, dispositions that are inherent in design practices:</p> <ul style="list-style-type: none"> <li>- Embracing uncertainties and complexities</li> <li>- Be cognizant of and resolve real-world, ill-defined problems</li> <li>- Relentless drive to seek out how things work</li> <li>- Use of doodling and sketching, and 3D manipulation of resistant materials as a language for visualisation, communication and presentation</li> </ul>		<p><b>Enrichment</b></p> <ul style="list-style-type: none"> <li>- Design with a purpose / Giving back to the community: Design Projects targeted at the needs of the community or specific groups</li> <li>- Micro-bit programming</li> <li>- Organic vegetable farming</li> </ul>
Term	Learning Experiences (chapter, activity)	Learning Outcomes & Assessment
1	<p><b>Learning through experiencing (Integrated Learning &amp; Design Thinking)</b></p> <ul style="list-style-type: none"> <li>- Seeking Design Opportunities</li> <li>- Research &amp; analysis skills (PIES, PMI, SWOT)</li> <li>- Designers' responsibilities, empathy</li> <li>- Concluding from research using 5W1H</li> <li>- Generating the design brief and design specifications</li> </ul>	<p><b>Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>- Research and analysis skills</li> <li>- Understanding society needs (empathy)</li> <li>- Resulting in presenting a thoughtful design need</li> </ul> <p><b>Weighted Assessment 1</b></p> <ul style="list-style-type: none"> <li>- Theory paper (an elective)</li> <li>- Skill-based project</li> <li>- Regular feedback via class work and assignments</li> </ul>
2	<p><b>Idea Conceptualisation and Development</b></p> <ul style="list-style-type: none"> <li>- Brainstorming, SCAMPER, Shape-borrowing, Design elements and principles (creativity skills)</li> <li>- Isometric, oblique, 2-point perspective drawings (using sketches and annotations to communicate thinking)</li> <li>- Form and Function, Material properties and selection, simple construction methods</li> <li>- Applications of Structures, Mechanisms and Electronics</li> <li>- Soldering activity</li> <li>- Use of mock-up(s) to test ideas</li> <li>- Decision making techniques</li> <li>- Anthropometry &amp; Ergonomics</li> </ul>	<p><b>Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>- Idea generating, creativity and decision-making skills</li> <li>- Sketching skills</li> <li>- Understanding basic resistant materials</li> <li>- Understanding basic technological areas (structures, mechanisms and electronics)</li> <li>- Ergonomics and safety consciousness</li> <li>- Resulting in developing the design solution thoroughly and thoughtfully</li> </ul> <p><b>Weighted Assessment 2</b></p> <ul style="list-style-type: none"> <li>- Theory paper (an elective)</li> <li>- Skill-based project</li> <li>- Regular feedback via class work and assignments</li> </ul>

3	<p><b>Production Planning / Making</b></p> <ul style="list-style-type: none"> <li>- Applying basic working drawing skills</li> <li>- Applying making skills in any/all of the three resistant materials (wood, metal, plastic)</li> </ul> <p>Throughout the coursework duration, students will plan and monitor their own progress through the use of a Gantt Chart, flow chart, sub-plans, and reflections.</p>	<p><b>Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>- Project planning and monitoring skills</li> <li>- Basic working drawing understanding (three views, assembly drawing, material list, isometric drawing)</li> <li>- Material handling skills</li> <li>- Resulting in producing a prototype that meets the defined intent</li> </ul> <p><b>Weighted Assessment 3</b></p> <ul style="list-style-type: none"> <li>- Theory paper (an elective)</li> <li>- Skill-based project</li> <li>- Regular feedback via class work and assignments</li> </ul>
4	<p><b>Content Revision</b></p>	<p><b>Learning Outcome</b></p> <ul style="list-style-type: none"> <li>- Students to be prepared for the full written exam (theory paper)</li> </ul> <p><b>Semestral Assessment</b></p> <ul style="list-style-type: none"> <li>- Paper 1 (theory paper) and Paper 2 (coursework)</li> </ul>