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**Heritage College Design, Technology & Engineering**

**Material solutions**

**Stage 2 Course Overview 2022**

Stage 2 Material Solutions is a 20 credit course that will engage students with a series of tasks during the first three terms of the 2022 school year. The tasks are outlined below with deadline dates provided. Please note **deadlines in this course are not flexible** and final products are to be submitted by the stated due dates. **Failure to submit by the deadlines provided will have a negative impact on final grades**. The Principal and parents will be advised of failure to submit within 24 hours of the deadline. Materials   
Solutions has both internally and externally assessed components which are subject to moderation at the end of the school year.

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| **Task** | **Product** | **Due Date** |
| **Specialised skills task 1**  **Assessment Type 1 (AT1)** | Students will produce a hall table under guided instruction and orthogonal drawings. The project will use a range of tools, machines and power tools. This skills task should give students a range of skills needed to produce their designed product. Students will evaluate the table against the drawings and example.  (Word Count 500) | Week 10  Term 1  13/4/2022 |
| **Specialised skills task 2**  **(AT1)**  **20%** | Students utilise Autodesk Inventor or Fusion 360 to create joints and parts of products. This task will support students to gain basic CAD skills or improve current skill sets. Students will evaluate the drawings and skills that they obtain and how effective they will be for their product.  (3 week computer based task plus evidence. Word Count 500) | Week 10  Term 1  13/4/2022 |
| **Resource Study**  **(AT3)**  **2000 Words**  **30%** | Students will **Investigate and analyse** the functional characteristics and properties of two or more materials of their choice. Students will create a series of tests to generate data on the functional characteristics of the materials. Students will also investigate the sustainability of the materials they test and explore ethical issues related to their designed solution in AT2. (Word count 2000) | Week 1  Term 3  29/7/2022 |
| **Design Process and Product**  **(AT2)**  **Total word count for this section 3000 Words or Multimodal**  **Video record of the product.**  **50%** | Students will undertake a design process where they will:  **Investigate** and create a design brief. Investigate and analyse products that clearly connect to their design brief. Throughout the investigation students will explore product features such as function, aesthetics and constraints in direct relation to their brief. | Week 2  Term 2  12/5/2022 |
| **Design, develop and plan** concepts that they have analysed from their investigation. Create a variety of solutions for the brief using drawings and sketches. Validate a designed solution that best meets the brief and develop a series of CAD drawings to support their production process.  Students will develop a materials and costing list for the product, as well as a procedure and schedule for the safe and timely manufacture of their product. | Week 4  Term 2  26/5/2022 |
| **Produce** a product by applying skills, processes, procedures and techniques to create the product that best meets their brief. | Week 9  Term 3  30/9/2022 |
| **Evaluate** the design process and product they have created in response to their design brief as well as their product realisation. | Week 1  Term 4  20/10/2022 |

**Mr P. Manser**

Design and Technologies Teacher