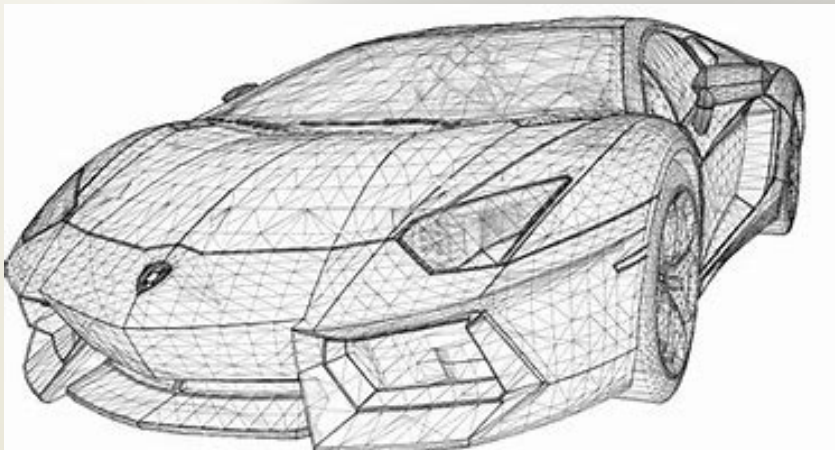
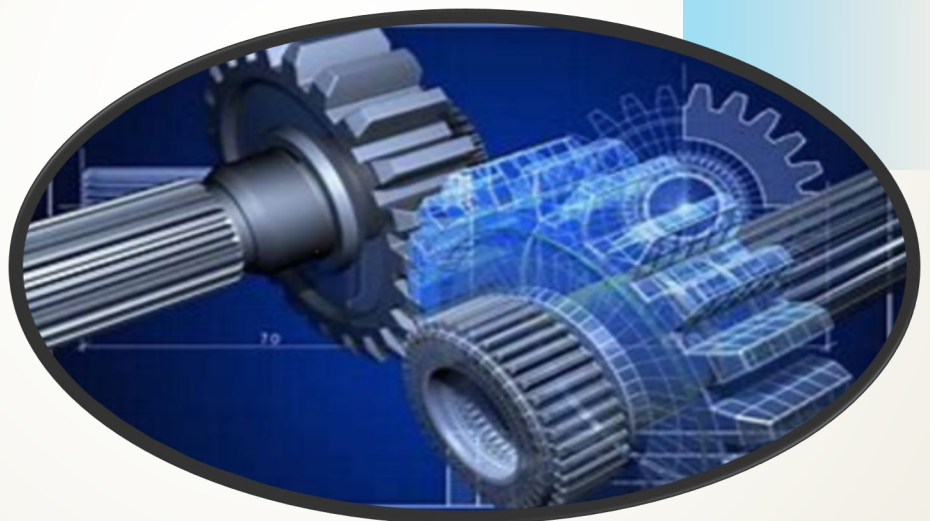


A- Level Engineering Summer Pack 2019



How the Engineering Course Will Be Assessed 2019-2020

This qualification is linear. This means that students will sit all exams and submit all their non-exam assessment at the end of the 2 year course

Content Overview	Assessment Overview	
<p>This paper is set out through four sets of questions that predominantly cover technical principles within each endorsed title. Learners will be required to:</p> <ul style="list-style-type: none">analyse existing productsdemonstrate applied mathematical skillsdemonstrate their technical knowledge of materials, product functionality, manufacturing processes and techniquesdemonstrate their understanding of wider social, moral and environmental issues that impact on the design and manufacturing industries.	<p>Principles of... (01)</p> <p>80 marks</p> <p>1 hour 30 minutes</p> <p>Written paper</p>	<p>26.7% of total A Level</p>
<p>This component has a series of longer answer questions that require learners to demonstrate their problem solving and critical evaluation skills. Learners will be required to:</p> <ul style="list-style-type: none">apply their knowledge, understanding and skills of designing and manufacturing prototypes and productsdemonstrate their higher thinking skills to solve problems and evaluate situations and suitability of design solutions.	<p>Problem Solving in... * (02)</p> <p>70 marks</p> <p>1 hour 45 minutes</p> <p>Written paper</p>	<p>23.3% of total A Level</p>
<p>The 'Iterative Design Project' requires learners to undertake a substantial design, make and evaluate project centred on the iterative processes of explore, create and evaluate.</p> <p>Learners identify a design opportunity or problem from a context of their own choice, and create a portfolio of evidence in real time through the project to demonstrate their competence.</p>	<p>Iterative Design Project* (03, 04)</p> <p>100 marks**</p> <p>Approx. 65 hours</p> <p>Non-exam assessment</p>	<p>50% of total A Level</p>

Preparing For A Level Engineering- Transition Holiday Project

- Before returning in September you will have some free time to investigate and research many aspects of Engineering.
- In order to help you prepare for Y12 and your Engineering A Level, we would like you to do some investigative tasks in order to get you thinking about the course.





Y12

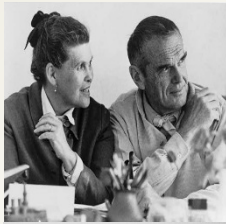
Engineering
Transition

Task Booklet

Task One: Research:

A designer can be anyone. You are the designer of your work and creations. Research a designer from the list below and produce an information pack and mood board showing your understanding of their work and how they became inspired –someone might just inspire you!

Choose the designer carefully as you'll be asked to use their work as inspiration in the next task.



Designers of choice:

Architectural Designers

Daniel Libeskind

Zaha Hadid

Frank Lloyd Wright

Product Designers

Charles & Ray Eames

Philippe Starck

Thomas Heatherwick

James Dyson



Evaluation of their work:

Use these questions to help you evaluate;

- What inspires the designer, • What background they have come from
- What could their designs inspire you to create,
- Do you like the designs?
- Are they practical or just an admirable creation?

Include examples of their work (pictures, descriptions, personal opinions)

Task Two: Design Brief-Design Ideas

Dear Engineer,

Engineers use their knowledge of science, technology, engineering, math and creative thinking to solve problems. Engineers refer to the stages of the design process as:

Specify, Plan, Design, Build, Test, Analyse.

This process is iterative and non-linear.

James has given you the task to design a unique/revolutionary new Hoover.

You are to generate 3 ideas, before deciding upon the 'final idea'.

You should consider the following when generating ideas

- Unique design
- Materials used
- Ergonomics
- Weight/portability
- Size
- Functions

Ideas should be professionally presented and be clearly annotated.



Task Three: Final Design -Evaluation

Now you have created a design solution you are expected to create a cardboard or Styrofoam prototype of your design and be able to confidently promote your design to an audience.

- The model will need to be as detailed as possible (any materials are acceptable)
- A short Power Point Presentation to your class
- A Final Design on A3 with annotation to explain the key features and how the user would use the product.



Check list:

Task 1:

Designer research: Include examples of their work, pictures, descriptions, personal opinions

Task 2:

Design Idea(s) to solve the design brief: Design a Hoover

Task 3:

- ☐ Model
- ☐ Power Point
- ☐ Final Design with annotation