

1st Year Engineering



Engineering offers students a lens through which to view the role and impact of engineering within their classroom, community and the world.

Through the study of engineering, students will have the opportunity to behave as engineers, and develop an engineering mind-set. The engineering process is both iterative and systematic.

It is iterative in that students continually test their design and modify it based on what they have learned.

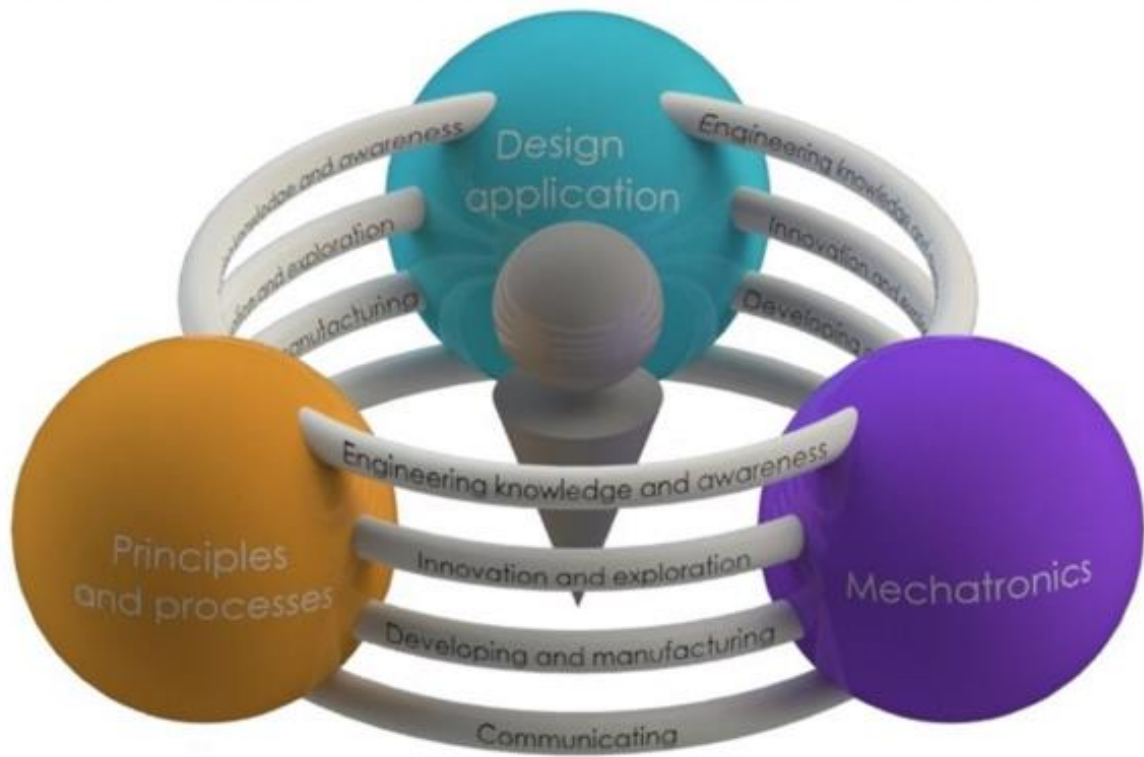
It is systematic in that students undertake several characteristic steps in reaching a solution. Students identify problems, integrate ideas for how to solve identified problems and try to improve the design or devise a better one.



The study of Engineering at junior cycle aims to develop the student as an engineer, more specifically to:

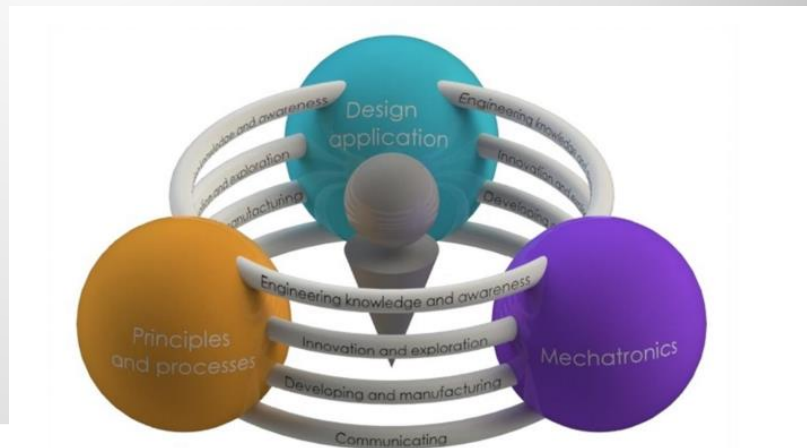
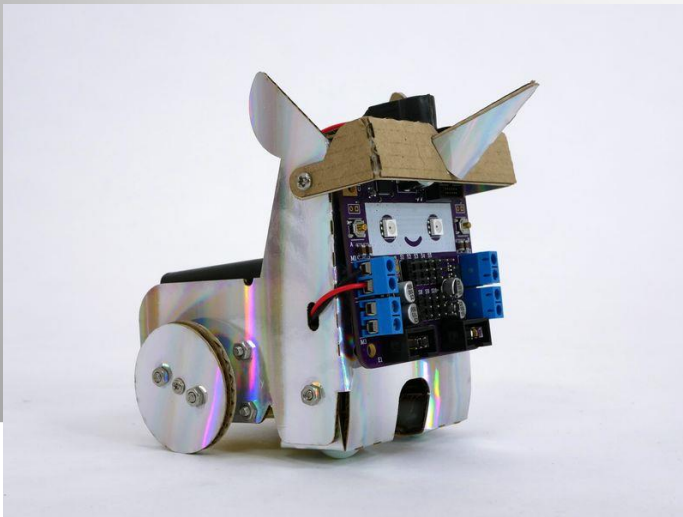
- create a high level of awareness of engineering processes
- develop the technical literacy of the student
- develop the skills necessary to manipulate material to engineer a product
- explore engineering developments
- appreciate the skills needed to acquire a high standard of finish of a product

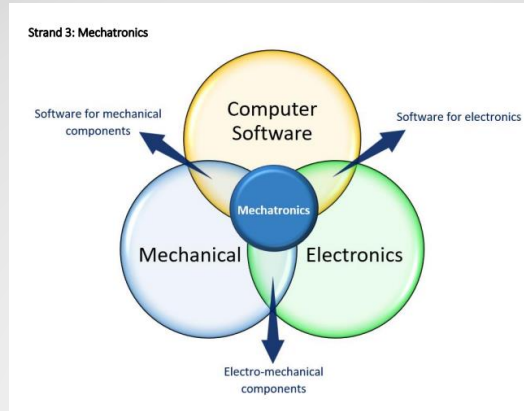




Strand 1: Principles and Processes In this strand students will learn about and employ the fundamental principles and processes of engineering. Students will apply their knowledge of materials and equipment to design and manufacture products. Students will be encouraged to use the engineering principles and processes, together with accuracy and precision, to help develop an engineering 'mind-set' which ultimately leads to the production of creative and efficient solutions of high quality and finish.

Strand 2: Design Application In this strand, students will learn about the key stages of the engineering design process. They will understand the importance of design on both the end-user experience and the economic and social impact of the product. They will discover how informed choice of materials and processes combine to produce a solution that is ergonomic and efficient. Students will learn the value of good project management and how to manage themselves and the product development through the journey from the design to the manufacture stage.





In this strand, students will use a combination of mechanical, manufacturing, electronic and software engineering to explore the relationship between simple inputs, processes and outputs. Mechatronics engages students in learning how high-tech manufacturing is performed and why it is becoming one of the fastest-growing career areas. Students will develop an appreciation of how control systems operate on a much larger scale and consider how the design of control systems can impact positively on the environment and sustainability. They will appreciate the role that Engineering can play in employing 'system thinking' to design products and services that contribute to a better future.



