



WELSH BACCALAUREATE

Advanced

Individual Project

Bangor University – School of
Electronic Engineering –
Engineering the Future



PRIFYSGOL
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UNIVERSITY

Brief – Engineering the future

The following statements could form the basis of your research project:

Engineering is the science of ingenuity. The word “Engineer” derives from the French word “engin”, meaning “inborn talent, intelligence, or wit”, thus an Engineer is a talented, *ingenious* person. The world would be a radically different place were it not for engineering, whose products feed and shelter us, let us travel the world, both in person and virtually through communications technology.

The next thirty years promise to be a time of revolution brought about by engineered products, be they autonomous systems (such as driverless cars) or technologies for low-carbon energy such as nuclear fission and fusion. Electronic products will increasingly be incorporated into everyday items, from wearable electronics (e.g. clothes that can sense if we are unwell) to RFID tags for identifying products and “the internet of things” which will bring smart appliances. Technologies such as polymer electronics will reduce the cost of wearable electronics; optical communications will continue to improve our broadband connectivity and medical technologies will increasingly use electronics and microwaves to treat our ailments.

These technical advances ask serious questions about ethics and privacy—should a driverless car be allowed to choose between two different possible accident scenarios: one where one child dies or another where ten people are injured? Elon Musk is worried about risks to humanity because of products with artificial intelligence and there are many challenges to privacy while gaining the advantages of social media.

Contacts

<http://www.bangor.ac.uk/eng>