Aston University
Birmingham

MEng Student Projects in ME+D

Innovation for Business

Aston Innovation Scheme for SMEs

Student Projects in Engineering

Student Projects are an excellent way to derive tangible commercial benefits from access to Engineering and Applied Science students, academics, facilities and expertise at Aston University.

What is a Student Project?

Student Projects can be a highly effective mechanism for small and medium sized enterprises (SMEs) to increase their competitiveness by engaging with Aston University. A student with skills specific to your industry can be engaged to work on a short-term project with expert input from their academic supervisor.

What are the benefits?

- There is no financial cost involved – providing an economic way of developing technologies or solving design/manufacturing problems
- The project is designed solely around the requirements of your business
- High quality research with significant academic input
- Allows industry to forge links with Aston University, its knowledge and facilities

How does it work?

You introduce the research project you need investigating and, according to your business needs, we offer a student who can carry out research on behalf of your company that is supervised by a leading academic from a relevant technical area.

Projects run from October to March, with a nominal project time of 30 days. Organisations are required to provide a co-supervisor based within the company who would be the company 'champion', supervising the student with regard to company practices and policies, also guiding the student in the research topic identified.

Mechanical Engineering and Design

The MEng in Mechanical Engineering and MEng in Electromechanical Engineering provides students with a high level of expertise in:

- Finite Element Analysis
- Dynamics
- Thermodynamics and Fluids
- Energy Efficiency
- Control Engineering
- Sensors and Activators

Birmingham City Council

Aston University
Engineering & Applied Science

Aston University
Business Partnership Unit

Case studies

Below are examples of successful student projects associated with Mechanical Engineering and Design.

Case Study | MEng Project with a medium-sized enterprise

The Company: Boxmag-Rapid Ltd. (now Eriez Magnetics Europe Ltd.)
Area: Electromechanical Engineering

This company of over 100 employees is based in central Birmingham. Its product range includes novel mechanical and vibratory transportation mechanisms, in addition to specialised permanent and electromagnet products.

Completed MEng Project outcome:
Lifting spreader-beams are used in materials handling such as steel stockholding. Usually operated in conjunction with an overhead crane, they allow heavy material bundles or plates to be transported. Electromagnets are an integral part of the beam design when ferrous materials are involved. The company produces a range of spreader lifting-beams to meet vastly different customer requirements where, for example, the materials to be transported can vary from thin sheet to heavy bundles of bars and tube.

This work was undertaken over six months on a one day-per-week basis by two students. The aim of the project was to develop laptop software that allowed rapid computer-based lifting beam design selection and costing, given a set of design criteria provided during meetings at a client company. This was achieved and is now in use at the company.

Case Study | MSc Project with a small enterprise

The Company: T&E (Designs) Ltd.
Area: Aeromechanical Engineering

This company is a consultancy house comprising six employees based just outside Birmingham, whose output is specialised aerospace and structural engineering designs for Ministry of Defence purposes.

Completed MSc Project outcome:
Transducer balances are used in the testing of wind tunnel models, including aircraft and missile designs. These exceptionally sensitive instruments are used to measure the loadings from model configurations subjected to varying angles of orientation and airspeeds within the working-section of any wind tunnel.

This work was company-based, undertaken full-time over six-months by one student. Its research addressed aspects of mechanical stiffness, material stresses, fatigue and fracture considerations, also ‘shakedown’ conditioning. The project resulted in an unique design methodology for transducers that resolved problems associated with the failure of existing balances operating in MoD wind tunnels. The use of this design procedure was extended to additional clients such as the Aircraft Research Establishment and BAe.

The Company – Benefits

- Fresh thinking around problems results in commercially beneficial outcomes
- These projects answer real engineering needs of a company
- Good links with the University established for future collaborations

The Students – Benefits

- Experience in the technical aspects of a real engineering problem
- Experience in the commercial and industrial aspects of a practical project
- Supervision from academic and industrial supervisors

Contact us

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