ES3G9-15 Engineering Business Management Group Project

23/24

Department
School of Engineering
Level
Undergraduate Level 3
Module leader
Alexa Kirkaldy
Credit value
15
Module duration
20 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

ES3G9-15 Engineering Business Management Group Project

Module web page

Module aims

The group project aims to give students experience of working within a team and mirrors the multi-disciplinary teams that exist in industry. The group project requires students to identify an engineering business challenge and to select and design a product or process to meet the need. The students will forecast and plan sales via appropriate channels, market the product, plan its manufacture or provision, provide a forward financial projection and design an appropriate supply chain structure in line with market requirements. All students selecting the module will undertake the project and will be aiming to provide viable recommendations to an end customer / user.
The project also allows students to develop their understanding of project management, time management, ethics, sustainability, risk and other appropriate industry conventions and best practices.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The overall objective of this project is to select and design a product or service appropriate to the engineering sector. The students will be required to recommend and justify:

- Product Design / Service Specification
- Manufacturing Methodology and strategy
- Marketing and Sales Strategy
- Competitor and Business Strategy
- Supply Chain Strategy
- Budgeting and Financial planning and forecasting.

The students will be split into groups of 5/6 and be expected to work as a multidisciplinary professional team and to plan and record the group and individuals contributions through formal mechanisms.

Students will be encouraged to assume positions / roles within the organisation to cover the specialisms above but will be expected to ensure interaction with other specialisms and to integrate and align outputs to meet the requirements of the final customer.

Examples of projects could be:

- Provision of a MRO for an aerospace organisation
- Provision of an installation and maintenance service for ASRS (automatic storage and retrieval system) in industrial warehousing
- Make / Buy / Outsourcing decision for a new product introduction in a specific sector
- Design of a physical method for moving consumer / food goods through the supply chain.

It is anticipated that each team will work on the same project and that they will be in competition with each other for the award of the final contract from the customer.

Members of staff will be appointed to support the projects and will provide guidance on commercial and organisational matters. Usually a student member of the group will be appointed as the Project Manager, Regular team meetings must be carried out and minuted to record major decisions, actions and contribution. The project deliverables will include Group Project Report / Portfolio; containing a range of commercial and professional documents submitted at various stages throughout the project to support recommendations and justification mentioned above.

Learning outcomes

By the end of the module, students should be able to:

- Identify a requirement / business need within an engineering sector and design and develop a product or process to fulfil this requirement.
- Utilise existing knowledge and experience and apply this to recommend solutions to a complex and unfamiliar engineering business need.

- Carry out extensive research of both academic and industry sources to recognise and extract relevant data or information, which can be applied to facilitate the development of a feasible solution to the engineering business problem.
- Consider the wider context of the project; including risk management, health and safety, ethics, environmental and sustainability limitations, where appropriate industry conventions and best practice and utilise this information to inform the project specification or outline.
- Plan and manage the project from the creation of the project specification or outline to the final recommendations; this might include managing a budget, understanding the commercial, economic and social environment of the project.
- Demonstrate effective communication and delivery of information in verbal and written forms to audiences with a commercial / business bias.
- Justify the recommended methodology to manufacture the product.
- Evaluate the product market, sales channels and develop a forward sales forecast to base a forward financial projection and provide a business justification for the product / service, which addresses the resources required for the first three years of operation.
- Demonstrate the ability to work as a member of a multidisciplinary team to achieve shared objectives within the scope of the project

Indicative reading list

This will depend upon the scope / subject of each project, but some general texts should include:

- Dyson R (2010 ‘Accounting for Non-Accounting Students’. Eighth edition. Prentice Hall.
- ES194 Module notes
- Harrison A (2014) ’Logistics management and strategy: competing through the supply chain’. Fifth Edition. Pearson
- Slack N, Brandon-Jones A. Johnston, R (2016) ‘Operations Management’. Eighth edition. Pearson

View reading list on Talis Aspire

Research element

Students are required (as a group) to carry out a substantial amount of research to firstly identify an engineering business problem. The research is likely to be carried out across the 25 weeks of the project and is likely to contribute significantly to the independant study element of this project.

The students will be required to utilise sources which are primarily literature based via the university library, associated databases and the WWW.

Subject specific skills

1. Students are expected to utilise the skills and knowledge attained during the taught modules from the first two years of their degrees.
2. Students are also expected to incorporate materials and knowledge from their final year taught modules within the SofE and WBS into the project.
3. Students are expected to engage in supplementary project specific knowledge (will be

delivered during T1).
4. Students should demonstrate their ability to conceive, a product, service or process
5. Student should demonstrate their ability to develop economically viable and ethically sound sustainable solutions to the engineering business problem identified.
6. Students should demonstrate their ability to be pragmatic, taking a systematic approach and the logical and recommend the steps necessary for, often complex, project concepts to become reality
7. Students should seek to achieve sustainable solutions to problems and have strategies for being creative and innovative
8. Students should identify projects risk, costs and where value can be derived for the customer or end consumer.
9. Students should demonstrate awareness of their ethical, social, cultural, environmental, health and safety, and wider professional engineering responsibilities

Transferable skills

1. The development of professional presentation and report writing skills to allow communication of ideas, solutions and recommendations.
2. Planning the scope of research required to support and justify the deliverables and objectives of the project.
3. Agree and practise appropriate group work strategies taking into account the skill base and knowledge of the team to incorporate principles of negotiation and persuasion.
4. Apply financial thinking to project proposals in order to provide justification, feasibility and growth predictions.
5. Apply problem solving skills, information retrieval, and the effective use of general IT facilities
6. Communicate (written and oral; to technical and non-technical audiences) and work with others
7. Plan self-learning, group progress and demonstrate continued progress and performance, as the foundation for lifelong learning/CPD
8. Exercise initiative and personal responsibility, including time management, which may be as a team member or leader
9. Demonstrating awareness of the nature of business and the focal enterprise in the creation of economic and social value
10. Overcome difficulties by employing skills, knowledge and understanding in a flexible manner whilst accounting for the strengths and weaknesses of the team members.
11. Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue
12. Appreciation of the global dimensions of engineering, commerce and communication
13. Be professional in their outlook, be capable of team working, be effective communicators, and be able to exercise responsibility and sound management approaches.

Study

Study time

Type	Required
Lectures	14 sessions of 1 hour (9%)
Seminars	5 sessions of 1 hour (3%)
Project supervision	10 sessions of 2 hours (13%)
Private study	111 hours (74%)
Total	150 hours

Private study description

111 Hours to the project

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A3

	Weighting	Study time
Group Project Report	70%	

Portfolio; containing a range of commercial and professional documents submitted at various stages throughout the project. A maximum of 40 pages should be submitted by one group member on behalf of the group. Including Peer assessment

Group Presentation	30%	

Group Presentation - Group presentation to a nominated panel, including the module tutor and other subject experts. The Group Presentation should be of a maximum 20 minute duration with time for questions following. Including Peer assessment

Feedback on assessment

Formative assessment at the end of T1.
On going formative verbal feedback during group meeting with project director / module leader.
Summative report feedback and group presentation.
Written feedback on commercial and professional documents submitted during the project.

Availability

Courses

This module is Core optional for:

- Year 3 of UESA-H115 MEng Engineering with Intercalated Year
- Year 3 of UESA-H11L Undergradaute Engineering (with Intercalated Year)

This module is Optional for:

- Year 3 of UESA-H113 BEng Engineering
- Year 3 of UESA-H114 MEng Engineering
- Year 4 of UESA-H115 MEng Engineering with Intercalated Year
- UESA-H11L Undergradaute Engineering (with Intercalated Year)
    - Year 3 of H11L Engineering (with Intercalated Year)
    - Year 4 of H11L Engineering (with Intercalated Year)

This module is Option list A for:

- Year 4 of UESA-H111 BEng Engineering with Intercalated Year
- UESA-H112 BSc Engineering
    - Year 3 of H112 Engineering
    - Year 3 of H112 Engineering

This module is Option list B for:

- Year 3 of UESA-HN12 BEng Engineering Business Management
- Year 3 of UESA-HN15 BEng Engineering Business Management
- Year 4 of UESA-HN13 BEng Engineering Business Management with Intercalated Year