B81PI Professional and Industrial Studies

COURSE DETAILS
Course Code: B81PI
Full Course Title: Professional and Industrial Studies
SCQF Level: 11
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes  Postgraduate Taught: Yes  Postgraduate Research: Yes

COURSE AIMS
- To support the group project work being undertaken in parallel
- To introduce concepts and practices in industry, from generation of an idea, to (basic) business planning, through to the infrastructure of support that exists in the UK.
- To enhance student understanding of what professional engineers need to demonstrate.
- To help the students start their professional engineering competence portfolio
- To enhance student understanding of industries' practices in engineering applications.
- To raise student awareness of enterprise/entrepreneurship, business planning and company organisation in targeted product and process development group projects within engineering disciplines.
- To increase student knowledge about enterprise skills application within start-up companies and SMEs.
- To examine the impact that enterprise activities have on the community.

LEARNING OUTCOMES – SUBJECT MASTERY
- Demonstrate critical evaluation of a case study scenario, involving analysis, synthesis and reflection of outcomes.
- Demonstrate knowledge of the importance of enterprise activity in the modern world and working in teams.
- Undertake critical analysis of an advanced topic as part of a working group.
- Understanding of concepts from a range of areas in product and process development, including some outside engineering and relating to entrepreneurship and business, and the ability to apply them effectively in engineering projects.
- The ability to use fundamental knowledge to investigate new and emerging technologies in the product development/new business environment.
- Generate an innovative design for systems, components or processes to fulfil new needs.
- Generate ideas for new products and develop and evaluate a range of new solutions in a financial and business context.
- Make general evaluations of commercial risks through some understanding of the basis of such risks with respect to new product development.
- Gain a thorough understanding of current practice and its limitations and some appreciation of likely
new developments in this domain.

**LEARNING OUTCOMES – PERSONAL ABILITIES**

Work productively in small teams, interacting effectively within the teams while displaying leadership and group skills to appropriate standards.
- Critically review, research and develop informed alternatives to given problems.
- Demonstrate some originality and creativity in dealing with issues in enterprise, business and associated engineering activities.
- Communicate to an audience, findings from research and analysis.
- The ability to apply engineering techniques taking account of a range of commercial and industrial constraints with the ability to integrate knowledge and understanding of mathematics, science, ICT, design, the economic, social and environmental context and engineering practice to solve a product development/business centred problem through involvement in group design projects.
- The ability to learn new theories, concepts, methods etc in unfamiliar (to them) situations which combine product development, roles in start-up companies, company funding, business planning and entrepreneurship.
- The capability to develop, monitor and update a plan, to reflect a changing operating environment
- Develop an understanding of different roles within a team and the ability to exercise leadership
- The ability to monitor and adjust a personal programme of work on an ongoing basis and learn independently as part of a team with specific responsibilities.
- To produce formal presentations and reports at a standard appropriate to a Masters’ level course.

**SYLLABUS**

Aspects of the professional engineer’s competencies.

Using technical and/or engineering knowledge and understanding to improve or exploit new and advancing technology;

Application of a combination of theoretical and practical methods to analyse and solve a technical and/or engineering problem. This may include the identification of a potential project and where you have conducted appropriate research to design and develop an engineering solution;

Technical and commercial leadership skills;

Ideas and idea generation; ‘The Entrepreneur - personality, drive and determination;

SMEs, innovation and intellectual property; business planning processes
### COURSE RELATIONSHIPS

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### LOCATION AND ASSESSMENT METHODS