B31XP MultiDisciplinary Group Project

COURSE DETAILS
Course Code: B31XP
Full Course Title: MultiDisciplinary Group Project
SCQF Level: 11
SCAF Credits: 15
Available as Elective: No

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

COURSE AIMS
The main aims of the project are (1) to encourage student to explore a topic of interest with the supervision of experts (2) to develop teamwork, leadership, presentation skills and project management by embedding the students in a small group of students from a different technical background (3) to develop their ability to find, analyse, assess and critique state of the art research in their area, identify the best approaches for their problem and validate their approach and (4) to work on a truly multi-disciplinary group project. It will specifically address the following:

To develop understanding in systems of systems engineering

To develop a critical understanding of litterature review and selection of optimal solutions from requirements.

To develop a critical understanding of real project management

To develop a critical understanding of integration & teamwork

To prepare for real multi-disciplinary industrial projects

LEARNING OUTCOMES – SUBJECT MASTERY

- Critical understanding of state of the art techniques in data science, robotics and telecoms.
- Practical knowledge of advantages and limitations of techniques to accompany detailed theoretical knowledge.
- Critical understanding of hardware limitations for real projects
- Practical experience of projects involving real platforms impolementation

- Good understanding of how to critically review and present existing literature.
- Ability to quickly evaluate a potential solution
- Ability to implement a solution described in a research paper/report
- Ability to propose new ideas to solve a specific problem.

LEARNING OUTCOMES – PERSONAL ABILITIES
B31XP MultiDisciplinary Group Project

- Ability to critically review, evaluate and implement a range of advanced techniques for a predefined specific task
- Practical experience of technical project development
- Practical experience of project and people management
- Practical experience of teamwork under strict time deadlines

- Ability to work on loosely defined objectives and requirements.
- Ability to work as part of a team and be accountable to other team members and supervisor for work under your responsibility.
- Practical experience of project and people management, including conflict management.
- Practical experience of teamwork under strict time deadlines

- Ability to work on different ICT media from prototyping (both hardware and software) to producing working demonstrators.
- Ability to communicate clearly to a team of mixed abilities and knowledge.
- Ability to present multi-disciplinary work to a mixed audience

SYLLABUS

- Complex Systems Engineering design and understanding. The students will be provided with a basic set of platforms (robots, Comms) complete with sensors and processors and will have to integrate algorithms designed from knowledge learnt in other supporting modules in their respective MSc(s). A demonstration day will be organised where the students will demonstrate the output of the project. This can be a set of algorithms, implementation onto hardware or a mixture of both. The projects will be undertaken by groups of 3 or more students (maximum 5).
- Project & People management
- Software design and integration. Cross compilation and debugging
- Real life development and testing of control, communications, robotics, data science, signal and image processing algorithms
- State of the art robotics, embedded systems and data science demonstration

COURSE RELATIONSHIPS

N/A

LOCATION AND ASSESSMENT METHODS

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