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| 4161PDESemester 1*Design technology* | Computer Aided Modelling(20c) | *Aim:*To introduce students the knowledge and skills needed to use computer aided modelling techniques. | *Learning activities:*This module will be delivered through an integrated series of lectures and workshops. The learning activities are student focused and develop the students' modelling and design knowledge through experiential learning. | *Assessment:*In class solid modelling test (100%) |
| 4162PDESemester 1*Design technology* | Design Visualisation(20c) | *Aim:*Develop fundamental sketching, rendering and modelling skills | *Learning activities:*This module will be delivered through an integrated series of lectures and tutorialised practical sessions. The learning activities are to be student focused and develop the students design knowledge through experiential learning. | *Assessment:*Inclass traditional sketchtest (50%) Digital sketching portfolio (50%) |
| 4163PDESemester 1*Design technology* | Design Principles(20c) | *Aim:*The module aims to endow students with tools for the successful completion of a concept model using fundamental design theories and practices. | *Learning activities:*This module will be delivered through an integrated series of lectures, workshop sessions and guided design activities. The learning activities are to be student focused and develop the students' design knowledge through experiential learning. | *Assessment:*Self Awareness (10%) NPD Report (30%) Concept Product Models (60%) |
| 4173CSDSemester 1*Design technology* | Design Principles(20c) | *Aim:*This module aims to equip students with tools to enable the successful completion of a concept model using fundamental design theories and practices. The module will help identify and reflect upon personal achievements and develop teamwork. The creative and imaginative approaches to problem solving will be distilled through a concept model and 3D design techniques. | *Learning activities:*This module will be delivered through an integrated series of lectures, workshop sessions and guided design activities. The learning activities are to be student focused and develop the students' design knowledge through experiential learning. | *Assessment:*Self Awareness (10%) NPD Report (30%) Concept Product Models (60%) |
| 5173CSDSemester 1*Design technology* | Applied Electronics And Control(20c) | *Aim:*This module covers the fundamental theory behind the design of sensors, electric motors and microcontrollers through a process of discovery in applied, creative projects. The module will explore the design of remote intelligent systems, the application of measurement requirements and the ways in which we can interface & program sensors to visualise output data. | *Learning activities:*Demonstration, workshop and practical activities applying topics discussed. The learning activities are to be student focused and develop the students design knowledge through experiential learning. | *Assessment:*Design and Practical Portfolio (100%) |
| 4164PDESemester 2*Design technology* | Introduction to Electronics and Control(20c) | *Aim:*This module introduces the fundamentals of applied mathematics and electronics, both theoretically and through practical application, building circuits in laboratories. You will also learn to write simple code as a tool for engineering. You will work both individually and as part of a group during this module. | *Learning activities:*Lectures, tutorial, Demonstration and practical activities | *Assessment:*Idea design and plan (30%) Final demonstration (70%) |
| 4165PDESemester 2*Design technology* | Mechanics, Materials and Manufacture(20c) | *Aim:*This module will cover the subjects of basic mechanics, mathematical theory, materials science and manufacturing technologies through a series of case studies and design-led lectures, seminars and workshops. | *Learning activities:*This module will be delivered through an integrated series of lectures, tutorials, practical sessions, guided design activities and case studies. The learning activities are to be student focused and develop the students design knowledge through experiential learning. | *Assessment:*Mechanical Sci Test (70%) Materials and Manuf Test (30%) |
| 4166PDESemester 2*Design technology* | Model Making & Engineering Practice(20c) | *Aim:*Introduce design modelling and provide the practical skills necessary to produce physical 3D models. | *Learning activities:*This is a studio based, practical module were students are taught the basic modelling skills required for their programme of study. | *Assessment:*A portfolio of models (100%) |
| 4174CSDSemester 2*Design technology* | Introduction to Electronics and Control(20c) | *Aim:*This module introduces the fundamental concepts of electronics and control, through theory and practical applications in the laboratory. The concepts of simple program design, as an essential tool for modern device development, will be outlined. Work will be undertaken individually and will also be developed within teams. | *Learning activities:*Demonstration, practical and workshop activities. | *Assessment:*Interim Presentation & Design (30%) Final Presentation & Demo. (70%) |