

# Our Students Projects

## BEng in Mechanical Engineering & BEng in Precision Engineering & Design

### Year 3 (Level 7)

Year Coordinator: Michael Moffatt

Demonstration Location: General Engineering Workshop (F0023)

No.	Project Name and Description	Students
1	<p><b>Wheelchair Power Assist</b> These students have designed and build an innovative mobility system which can be attached to a wheelchair to provide a battery operated power drive.</p>	Shane Flannery Ryan Langan Jorge Romero Costa Angel Albiñana Angel
2	<p><b>CNC Milling Machine</b> Four students have designed, built and tested a 3-axis CNC milling machine, which uses three computer numerically controlled motors to drive a high-speed, water cooled machining head motor, mounted in a precision manufactured milling machine.</p>	Christopher Gallagher Gerard Breen Michael Duffy Conor Doherty
3	<p><b>Muscle Stimulation Machine</b> Three students have designed, built and tested a prototype muscle stimulation device to help patients with limited movement regain and maintain muscle mass and prevent muscle atrophy (wasting away of muscle mass due to being immobile).</p>	Aaron Carberry Niall Hoey Jorge Hernandez Garcia
4	<p><b>Saw Dust Compactor</b> This team has designed and built a saw dust compactor, powered by a tractor P.T.O., which will make briquettes from saw dust, without the use of binding adhesives.</p>	Kieran Conboy Colm Donaghue Eamon Doyle Dylan Taylor
5	<p><b>Aluminium / EPDM Flashing Roller</b> Lead, while commonly used as flashing in roof construction, can lead to the contamination of drinking water and cause hazards to human health. This machine will replace lead flashing by rolling aluminium and EPDM rubber into a single replacement and much improved flashing material.</p>	Seán Conway Gerrard Regan Glen Wheeler Seán Regan
6	<p><b>Bulb Assembly Machine</b> This fully automated car bulb assembly and testing machine, has been designed, built and tested by a team of four students to replicate the type of automation equipment used in modern advanced manufacturing companies.</p>	Daniel Reape Fatmir Sulaj Adam Cycura Thomas Gallagher

7	<p><b>Wind Powered Water Harvesting System</b></p> <p>This is a fully functional prototype of a mechanically driven, wind powered water harvesting system which uses a 12 blade wind turbine and a specially designed and built gear arrangement to pump water to a header tank.</p>	<p>Ciaran Deeney John Lynch Aaron Grew Ryan Kelly</p>
8	<p><b>Vertical Axis Wind Turbine</b></p> <p>This team of four students have designed and built an innovative Vertical Axis Wind Turbine which incorporates a concentrator to allow for optimum wind usage combined with an axial flux generator.</p>	<p>Alan Haran James Higgins Sharon McLaughlin Gary Scanlon</p>
9	<p><b>Car Mirror Actuator Assembly Machine</b></p> <p>This team has designed, built and tested a fully automated mirror actuator assembly machine, which includes high precision components and employs automation technologies used in modern assembly machinery.</p>	<p>Seán Mc Dermott Mark Mc Loughlin Dean Mc Gowan Donagh O' Malley</p>
10	<p><b>Automatically Fed Post Driver</b></p> <p>Four students have designed, built and tested a prototype for a novel and innovative Automatically Fed Post Driver, which removes the need for a second person by holding a fencing post in place while it is being struck by the hammer, and then automatically feeds the next post into position.</p>	<p>Colm Morley Shane Timoney Caolan Treanor Conor Walsh</p>

## **Bachelor of Engineering (honours) in Mechanical Engineering (Level 8)**

Year Coordinator: Sean Dalton

Demonstration Location: General Engineering Workshop (F0023)

No.	Project Name	Student
11	<p><b>Plastic snap fit analysis</b></p> <p>The purpose of this project is to carry out an investigation into plastic snap fit design. The main objective is to explore opportunities for optimising the design of snap fits.</p>	<p>Bilal Ahsan</p>
12	<p><b>Automated modelling of CAMs</b></p> <p>Modern CAD systems have features for modelling a variety of standard components. SolidWorks has a feature form modelling cams however, the cams it generates are faceted. The purpose of this project use Visual Basic to automate the modelling of cams to enable cams with a smooth profile to be produced.</p>	<p>Bobby Barry</p>

13	<p><b>Material Characterisation of a Bio-absorbable Polymer Medical Implant Processed via Additive Manufacturing</b></p> <p>PolyLactic Acid (PLA) is already being used for the production of implantable bone fixation screws and plates, however some processing methods often compromise the strength of the polymer. In this study the material properties of PLA processed using a Fused Deposition Modelling machine are evaluated, investigating how processing temperatures effect both the mechanical properties and molecular structure of the polymer.</p>	Alan Conboy
14	<p><b>Cam Simulation (Build and test)</b></p> <p>The purpose of the project is to investigate cam dynamics with an emphasis on physical testing. Following initial investigation of different cam types and profiles the student will model and machine a cam of specified profile. Then using appropriate instrumentation and assessment of the cam dynamics will be carried out.</p>	Joe Cooper
15	<p><b>Computer modelling heat transfer</b></p> <p>The purpose of this project is develop software to enable the used calculate heat loss from a house. Following initial investigation into heat transfer, u-values for different materials etc the student will develop a computer program for calculating heat loss from a domestic dwelling taking into account heat loss from external walls and windows, floor and roof.</p>	Martin Gallagher
16	<p><b>Wave energy</b></p> <p>The objective of this project is explore wave energy. The specific focus of this project is to develop a device for measuring wave characteristics. It is anticipated that this device will consist of some kind of accelerometer type device. Labview or matlab will be used to process this data.</p>	Oran Gavigan
17	<p><b>Plastic snap fit analysis</b></p> <p>The purpose of this project is to develop a calculator for plastic snap fits to provide a convenient tool to enable a designer to determine the dimensions necessary to achieve a specific closing force. The calculations performed with be backed up and verified by Finite Element Analysis and physical testing.</p>	Gary Harte
18	<p><b>Investigation of brake cooling</b></p> <p>The purpose of this project is the carry out an investigation of brake cooling. This will include a study of the effectiveness of slots as compared to plain disk, effectiveness of air cooling and the effect of different brake material. Involved in this investigation will be thermal analysis, flow analysis and physical testing.</p>	Sean Lydon

19	<p><b>Polylactic Acid: Degradation rate based on size dependence</b></p> <p>The objective of this project is to investigate the effect of sample size on material degradation. This study requires the producing and degrading of samples of PLA under identical conditions; the only variable being the thickness of the samples. With the results obtained, the student will prove or disprove the hypothesis that larger scale samples degrade faster than smaller samples, due to an autocatalytic degradation process that occurs internally with this material.</p>	Thomas McDonagh
20	<p><b>Biomass moisture content reduction</b></p> <p>The purpose of the project is to study the effect of moisture on the energy output when burning biomass fuel. This project will also investigate the most effective and efficient ways of drying these such fuels.</p>	Nicholas Murphy
21	<p><b>Automated modelling of standard component</b> (Modern CAD systems have capabilities to generate standard components. Suppliers of standard parts often provide facilities to enable standard parts to be generated. This purpose of this project is to investigate possibility of automating the modelling of std. components in SolidWorks. This will involve, recording macros, automating the modelling process using VBA and reading of values from Excel or text file.</p>	Michaela Niland
22	<p><b>Analysis of coupling wear</b></p> <p>The purpose of this project is to investigate the factors effecting coupling wear. The project is being carried out in conjunction with a company one of whose products uses a coupling to link a power source to an output shaft. They have been experiencing significant wear on this coupling. The purpose of this project is to investigate possible causes of this wear and to explore possible solutions.</p>	Sean O Hagan
23	<p><b>Cam Simulation / Cam dynamics</b></p> <p>The purpose of the project is to explore cam dynamics and to investigate the ability of SolidWorks motion software to accurately simulate there characteristics. Following initial investigation cam type and profiles the student will focus on modelling rotary cams of known profiles. Different cam profiles are known to have different dynamic characters. In this project SolidWorks will be used to evaluate these characteristics. Valve bounce will also be investigated.</p>	Stephen O Toole
24	<p><b>Black box for cars</b></p> <p>The purpose of this project is to explore the concept of the 'black box' and to explore the possibility of using such a device in a car. The objective of this to determine what features might be required and what kind of</p>	Aaron Rodgers

	<p>information such a device might yield in a crash situation. In exploring the concept it is proposed to use a Vernier Labquest data logger (which has both accelerometers and GPS logging capabilities) to explore the concept.</p>	
25	<p><b>Heat systems investigation</b>  The purpose of this project is to carry out an investigation of the different types of industrial heating systems. A central theme of this investigation is to investigate and compare the different heat pump technologies available and to compare their effectiveness.</p>	Niall Skinnader
26	<p><b>Analysis of the Magnus effect</b>  When a drum rotates on flowing fluid this influences the flow characteristics above and below the drum, this causes a lift force to be generated perpendicular to the direction of flow. This is referred to the Magnus effect. The purpose of this project is to investigate the Magnus effect and to compare the results obtained by standard formula, computational fluid dynamics and physical testing.</p>	Kevin Smith
27	<p><b>Aerofoil Analysis</b>  The purpose of this project is to investigate what is the optimum shape for an aerofoil section in term of chord length, length the thickness ratio and camber. The student will research the relevant theory, and compare the results obtained using theory to those obtained using physical testing and computer simulation (CFD).</p>	Gytis Spirgys
28	<p><b>Strain gauge apparatus</b>  The purpose of this project is to devise a system/apparatus to verify strain gauge theory. The apparatus should be capable of being fitted with both single and rosette strain gauges and should be capable of being loaded in both bending and torsion. The project will also involve the development of a calculator for processing strain gauge results. The resulting system should be suitable for use as an apparatus for carrying out laboratory experiments in the future.</p>	Jack Winters

## Bachelor of Engineering in Mechatronics (Level 7)

Year Coordinator: Mary Nolan/John Hession

Demonstration Location: Mechatronics & Project Room (E2007/E2008)

No.	Project Name	Student
29	<p><b>Dual Axis Solar Tracking System</b> Solar panel mounted upon a controlled frame to move and direct the panel towards the highest intensity of light e.g the sun.</p>	Rory Flanagan
30	<p><b>Conveyor Mounted Product Sorter with Vision System</b> The concept of our project was based upon a motorised conveyor product sorter. It would use a vision system along with various part and position sensors to sort and place parts.</p>	Nathan Given Sean Farrell
31	<p><b>Ro-Optic Bar</b> Automated drink serving machine operated using a Mitsubishi Melfa RV-2AJ robotic arm and a Siemens S7 PLC.</p>	Niall Griffin Sophie Knox
32	<p><b>Automated pneumatic arm with vision system</b> Conveyor system with a pneumatic arm picking and placing blocks from the conveyor into bins depending on colours seen by the vision system</p>	Colin Scanlon John Octavo
33	<p><b>Festo MPS System</b> The programming of a modular production system consisting of a distribution and testing station simulating a production line using PLC's, pneumatics and sensors.</p>	David O Toole
34	<p><b>The Automated Fertilizer Spreader</b> It has been designed to spread the correct amount of granules on the different shades of green. There is a vision system used to differentiate between the different shades of green. Depending on the shade of green the motors while either spread more or less granules depending on the shade of green the spreader is travelling over.</p>	Ryan Colleran Saram Shaikh
35	<p><b>Skittles Sorting Machine</b> Skittles Sorting Machine is a machine that detects the colour of skittles and sort them to the identical colour bin respectively.</p>	Yew Chuan Lim Gee Tat Kan

## Bachelor of Engineering (Honours) in Mechatronics (Level 8)

Year Coordinator: Marion McAfee

Demonstration Location: Mechatronics Project Room (E2008)

No.	Project Name	Student
36	<b>Speech Controlled Robot</b> This project involves the development of a speech-controlled Arduino based robot. Incorporating automatic speech recognition, the robot will perform certain movements when told to do so. The idea is that the robot would be a basic prototype of a mobility aid for a disabled person which they can control solely by the use of voice commands.	Eimear Fitzsimons
37	<b>Object Tracking Robot</b> This project involves the design, build and programming of a small autonomous vehicle which utilises a vision system to track the movement of a desired target. The output of the tracking algorithm will signal the motor control board to follow the object as required.	Drew Monaghan
38	<b>Control using Brain Computer Interface (BCI)</b> This is a project to show how raw brainwave patterns can be read using a Electroencephalograph headset. These signals are then transmitted to a computer where the signals are processed and used to control a robot or simple machine. This project displays new technology that is becoming more advanced and has the possibility of greatly aiding people with disabilities in the future.	Matthew Curran

39	<p><b>Robotic arm for testing touch screens in automotive industry</b></p> <p>This is a project involves design and programming the robotic arm to perform assigned tasks to confirm correct operation of touch screen. The robotic arm will be controlled through Arduino board and follow the sequence. After each step photo will be taken for comparison with the set of examples to ensure that touch screen is fully operative. This project will use the vision systems and is aiming to eliminate highly repetitive tasks.</p>	Marcin Targosinski
40	<p><b>Obstacle Avoidance System for the Blind</b></p> <p>This project involves using a vision system to detect obstacles and alert the user to the position of obstacles in relation to the user using audio feedback provided by a set of cheek bone conducting headphones. The project uses an Intel Edison control board to send the audio feedback via Bluetooth to the headset. A webcam is used along with Matlab software to acquire and process the images to detect the objects.</p>	Peter Gordon

## Bachelor of Engineering in Electronic Engineering (Level 7)

Year Coordinator: Eva Murphy

Demonstration Location: Electronics Project Room (E2003)

No.	Project Name	Student
41	<p><b>Persistence of Vision Display</b></p> <p>Persistence of vision is the phenomenon where the human eye holds on to a visual image for a short period of time after the image has changed or disappeared. An everyday example of this is an incandescent light bulb, which flashes at 50 times per second [50Hz] yet to the human eye the light appears to be on continuously. This project takes the above phenomenon and uses it to display text by rotating a column of 7 LEDs at high velocity while flashing them in a timed sequence. This will also give the text the illusion of being suspended in air.</p>	Maurice Barry
42	<p><b>Heart Rate Monitor</b></p> <p>This project aims to build a heart rate monitor to aid with the detection of an epileptic seizure. When a person suffers such a seizure, their heart rate increases or decreases as a result. The project incorporates both a 'Mio link' heart rate bracelet and a circuit that measures heart rate using IR sensors. The bracelet transmits its data using Bluetooth technology while the circuit transmits its data serially. If the heart rate changes, then an alarm is sounded.</p>	Stephen Coleman



43	<p><b>Automated Parking System</b></p> <p>With more and more cars on our roads, parking spaces are getting much harder to find and harder still to fit into. With this in mind, this project uses geared DC motors and HC-SR04 ultrasonic sensors, combined with a PIC 18F4520 microprocessor, to guide a car around potential obstacles in its environment. At the touch of a button, it will identify a suitable parking space and carry out a safe parking manoeuvre, helping to cut down on road rage and insurance claims.</p>	Barry Comer
44	<p><b>Autonomous Rover Car</b></p> <p>The aim of this project is to develop a Rover Car that connects to the internet (Internet of things). Using this mobile internet connection and a remote server, we are able to send commands to the Rover from any device with a web browser from anywhere in the world. Commands that can be sent include orders to move the vehicle in different directions to have full control or one can activate an autonomous mode which moves the vehicle while avoiding obstacles. In order to avoid the obstacles, the rover has three sensors which informs the microcontroller of the distance to the objects, and an algorithm in the rover changes the direction to avoid obstacles. The system is continuously checking if there is an available GPS signal, and if finds this signal, sends the coordinates to a remote server every minute, and from a webpage we can see this coordinates drawn on a map.</p>	Jorge Crespo
45	<p><b>Persistence of Vision (POV) Wand</b></p> <p>This project is based on the Fantazian wand, a novelty clock that displays a message in the air. This project aims to demonstrate the phenomenon of Persistence of vision. Persistence of Vision has been around for many years and is naturally occurring within the human eye. In this project a microcontroller will implement timing to move an armature and to display "SLIGO IT". This project takes concepts learned throughout the Electronic Engineering degree, from physics to Electrical principles and Embedded systems just to name a few.</p>	Karen Cunningham
46	<p><b>Home Security System</b></p> <p>The aim of this project is to give people added security in their home. The project consists of a keypad in order to enter a secure pin number, an LCD to prompt the user to enter their pin and to display "correct or incorrect" pin entered. A PIR &amp; contact sensor is used to monitor any movement when the system is on. The user is notified via GSM to say the alarm has been triggered and a buzzer will also sound. This will be programmed through a PIC microcontroller. This approach is a cheap solution to what is currently used.</p>	Adrian Keaveney

47	<p><b>Ultrasonic Level Detector on the GSM network</b></p> <p>An Ultrasonic Sensor is used to detect the level of liquid in a tank. When predefined threshold limits are reached, both a local and remote alert system is activated. This comes in the form of a locally displayed alert on an LCD and a remote alert via SMS over the GSM network. This project was initially aimed at domestic oil monitoring. However, the versatility of detection by ultrasound coupled with the possibility of a global monitoring system, allows for scale up to an industrial application level.</p>	Steve Lyons
48	<p><b>Independent Living for the Elderly</b></p> <p>Statistics are showing that we are now living longer. It is in the interest of the state and of the elderly that they can remain living in their own home for as long as possible. To do this, homes need to be made 'smarter' to keep our elderly safe. This project aims to do this by demonstrating the use of sensors that could be placed in the home. The project includes a pressure mat to ensure the older person remains in bed at night; pressure sensors to ensure they take their medication from the container and a temperature sensor to ensure they are not too hot or cold in their home.</p>	Eliezer Malonda
49	<p><b>Chess Board with Optical Piece Detection and Data Feed</b></p> <p>This chess board will detect the positions of pieces placed upon it. It is intended to work with any standard set of pieces without modification. The purpose is to allow moves to be recorded electronically as a game progresses, and to supply a data feed of these moves to a personal computer, tablet or smartphone. Existing applications can then analyse the position to improve gameplay, or the moves can be communicated in real time to facilitate an audience viewing the game or players to take part remotely in real time. It will facilitate online, correspondence, and face to face play by individuals who are visually or physically impaired or who have a lower level of technological literacy.</p>	Ciarán Mac Lochlainn
50	<p><b>Secret Knock Detecting Lock</b></p> <p>This project comprises of a secret lock that, rather than use a key, opens by 'listening' to a pre-defined knocking sequence. The knocking sequence can also be changed easily for added security. The benefit of this system is that the 'key' can never be lost or stolen. The project works using a magnetic lock that is attached to the door and the secret knock will disengage the magnetic field which leaves the door free to open. It will have two status lights (one red and one green LED) to show whether the knock has been entered correctly or not and to show that the knock has been programmed correctly.</p>	Nicholas Metry

51	<p><b>SH-2016 Audio Synthesizer</b></p> <p>This project aims to build a micro-controller based music synthesizer. (It is also planned that the product will be available to buy via a dedicated e-commerce site) This synthesizer will be a device used by musicians and music producers to enhance flexibility in producing music. The interfacing of the analogue and digital modules will be handled through the use of the PIC18F. The PIC will serve as a dual digital controlled oscillator generator. The PIC control board will send a control voltage and two square wave signals to an analogue Waveshaper board. The Waveshaper passes a combination of two waves (each being either square/pulse/saw tooth) to a voltage controlled filter (VCF), an audio envelope (ADSR) and finally a voltage controlled amplifier (VCA) board.</p>	Pat Morrisey
52	<p><b>Automatic Pram Brake</b></p> <p>The aim of this project is to prevent injuries to young children in a pram. In 2011 an estimated 12,900 children under the age of five were treated in hospital emergency rooms for injuries associated with prams - some of these injuries were due to the pram rolling away or the child sliding out of the pram and choking. The project strives to be universal to all prams so the project will use force sensitive resistors (FSR) placed on the handle bars and under where the child sits; there is also a motor attached to the axle that will activate the manual brake on the pram if the person lets go of the handle bars or the child slides out of the pram.</p>	Patrick Moss
53	<p><b>Heart Rate Monitor</b></p> <p>This project is a microcontroller based heart rate monitor used to calculate a person's heart rate in Beats per minutes (BPM). The heart rate signals are collected through the finger using an Infrared Transmitter and Receiver pair on a finger probe. This signal is then amplified in order to convert it to an acceptable voltage level for the microcontroller to count as pulses. To eliminate noise in the signal a band pass filter was designed and used. These signals were counted by a PIC18f4520 microcontroller and displayed on the 16x2 LCD panel.</p>	Michael O Kane

54	<p><b>Security Monitor with SMS alert</b></p> <p>A system for home, business premises or campus security consisting of a PIR controlled security light, PIC microcontroller, GSM and an HD IP (Internet protocol) wireless CCTV camera. After dark, the PIR light senses motion in the area, its output voltage triggers the microcontroller to send an SMS via the GSM modem to one or several pre-defined phone numbers. At this time, the microcontroller also switches on power via a relay, to the IP camera. The footage recorded by the camera will be viewable real-time via an app downloaded to the users' smart phone, whilst also recording to a hard drive. The system will utilise the HD recording in association with sufficient light to aid in facial recognition to pursue convictions – if required or desired.</p>	Keith Sherwin
55	<p><b>Rare gas purifier</b></p> <p>A rare gas purifier is used in many industries including oil, gas and chemical industries. It is an inline instrument that is used in conjunction with a gas chromatograph. The purifier cleans the carrier gas used in the chromatograph and enables it to give accurate, consistent results. Purification of the gas happens in a heated chamber. The temperature of the chamber has to be precisely controlled and this is what my project is based on. A PCB using a microcontroller and employing a PID routine has been designed to give accurate temperature control to within 0.5°C</p>	Leonard Slattery
56	<p><b>Bullet Time Photography</b></p> <p>How great would it be to make a bullet-time effect video from the comfort of your own home! This project will give you the aspect of big budget film making videography and photography -but without the need for the big budget. The project will be programmed using a Raspberry PI, and will trigger mini cameras to capture the images from the cameras. And with the use of computer software, simulate and mould these images into a bullet-time effect, with little or no loss in the image quality - very similar to those in the film making industry using expensive cameras.</p>	Pat Tierney
57	<p><b>Stepper Motor Controller</b></p> <p>The project illustrates how the unipolar stepper motor can be driven using a PIC18F45K22 microcontroller. The stepper motor drives a linear scanner which can be used in many applications such as medical devices or laser scanning equipment. The code will generate three driving modes RUN, STEP and HOME POSITION. The LCD shows the selected mode, the motor speed can be modified using variable resistor through the ADC.</p>	Firas Tabousheh

## Bachelor of Engineering (Honours) in Electronic Engineering (Level 8)

Year Coordinator: Sean Mullery

Demonstration Location: Electronic Laboratories (E2003/E2004)

No.	Project Name	Student
58	<p><b>Image Quality Tester</b></p> <p>Video cameras have been around since the early 1920's. The quality of the image is one of the key factors that determine how good the camera's performance is. Over time video cameras have developed and have been integrated into a wide range of application that we use in our day to day lives. In recent times the automotive industry has started to use camera applications to enhance car safety features. These cameras aid the driver in reversing the car and ensuring that any blind spots are visible. If there is an issue with the quality of the image it could compromise both the driver and the surrounding people's safety. This project looks at one type of reversing camera and the issues it has with the quality of the image. There is a green tint in some of the images. Image processing techniques are used to analyse the image to determine if it is of the desired quality. Further image processing techniques are used to try and correct images that do not meet the required standard.</p>	Brendan Nestor
59	<p><b>IoT: Smart Home Control</b></p> <p>In the last number of years as consumer electronics have vastly improved, internet access more readily available and electronic devices decreasing in size but increasing in ability and process speed. This has led to a huge rise in the demand for devices to be connected to the internet.</p> <p>This thesis will examine these IoT connected devices around the home for monitoring and control. It will also examine the ease of integration between different technologies, protocols and also integrating these devices around the home safely and securely. The end result will be a local interface where the user can control various devices around the home and have feedback such as temperature (heating and water), lights and switch positions feedback. With so much data being shared one major concern involving the IoT is privacy and security. This Thesis will also implement various security protocols and ensure any data collected is securely stored and cannot be compromised. Experts are warning that the IoT will make many devices vulnerable to outside attacks so the top agenda for all manufactures is security to deter these attacks.</p>	Myles Sheehy

## Bachelor of Engineering in Civil Engineering (Level 7)

Year Coordinator: Kathryn Ryan

No.	Project Name	Student
60	<p><b>Investigation into the Performance of Domestic Waste Water Treatment Systems</b></p> <p>This investigation was carried out specifically with respect to their performance in relation to Biochemical Oxygen Demand and Suspended Solids removal. The EPA code of practice 'Wastewater Treatment and Disposal Systems Serving Single Houses (p.e. &lt;10)', sets out the treatment standards that must be met to in order to adhere to legislation.</p>	Sean Toland

## Bachelor of Engineering (Honours) in Civil Engineering (Level 8)

Year Coordinator: Bill O'Kelly-Lynch

No.	Project Name	Student
61	<p><b>The Design of Integral Bridges Built on Reinforced Soil Abutments</b></p> <p>The study involved the designing of an integral bridge abutment using design loads from an operational integrated abutment. The design of the abutment focuses on two design methods; the tieback wedge and coherent gravity methods. The reinforcement material selected are extensible PARAWEB straps, of which two sheath types were selected for comparison.</p>	Patrick Daly
62	<p><b>An investigation of the predicted load capacity of helical screw piles</b></p> <p>This is a study into the prediction methods for load capacity of helical screw piles</p>	Peter Dickson
63	<p><b>Optimisation of Small to Medium Wastewater Treatment Plant Monitoring, Data Management and Decision-making Processes, Practices and Protocols</b></p> <p>The project investigates the best practice operating guidance for a range of plant types and sizes and aims to identify and develop a framework of recommendations for best practices on the optimisation of wastewater treatment plants. This has been completed by investigating best practice operating guidance over a range of WWTP categories and by determining the effectiveness of sensors, probes and sampling</p>	Glenc McCaffrey
64	<p><b>Experimental testing of Ultra High Performance Fibre Reinforced Concrete (UHPFRC).</b></p> <p>UHPFRC are designed to exceed the performance of standard concretes, with improved strength, ductility, higher modulus of elasticity, high density, low permeability, resistance to abrasion and chemical attack. The experimental testing investigates the relationship between compression for and tensile strength for scaled flat slabs and beams</p>	Shane Wimsey

## Bachelor of Engineering (Honours) in Computing (Level 8)

Year Coordinator: Keith McManus

No.	Project name	Student
65	<p><b>Student Tasker</b></p> <p>Student Tasker is a free online task managing application that allows students to manage their own individual college/school work or group assignments. Users will firstly have to sign up to use the application. Once signed up, they will be able to create projects, create separate tasks within them projects and add their friends and other users and then they can add them to their own projects so they can collaborate together.</p>	Niall Corcoran
66	<p><b>API Healthcheck</b></p> <p>Project Idea - To create a website and accompanying android app that provide a service for software developers. The service is to test, document and present the results of web APIs and their online status.</p>	Timon Baudry
67	<p><b>Studicom</b></p> <p>Studicom is an android app that allows users to easily find out what accommodation is available for students around the IT Sligo campus. The app is aimed at first year students that would not have a good knowledge of the area or where is the best place to live for the academic year. It shows the user all of the student accommodations available and also the privately rented houses. It allows the user to get a student's insight into what the houses really are like from a blog that is populated by students sharing their views and experiences from living in certain accommodations. Uses android studio with a connection to an azure database.</p>	Neil Fallon
68	<p><b>Giggle</b></p> <p>Giggle was conceptualized with the aim of providing small acts and venues with a dedicated medium to post, promote and share their events. At present, the most common way that acts and venues share their events online is through the popular social medium, Facebook, which has its own events feature. However, Facebook is so bloated with different features and content that events only play a very small role, and they are often 'lost in the mix'. What this project aims to do is concentrate solely on events, increasing online visibility and revenue by reaching a more targeted audience.</p>	Enda Phelan
69	<p><b>SOC (Save Our Car)</b></p> <p>SOC is an Android based application which enables a user to effectively and efficiently locate the closest mechanic in their area in the case of an accident or a breakdown. Moreover SOC provides the user with vital functionality such as accessing their insurance companies contact information, taking a picture or video of an accident, retrieving a live AA Twitter feed, plus many more functionalities</p>	Craig Gallagher

70	<p><b>Repair Shop Ticketing System</b></p> <p>Project goal is to build a ticketing system for a repair shop that can both be used by the customer and staff in the shop. The system should allow the user in the shop to take details of the customer and take a report on what has to be repaired inside the shop. The report should identify the problems with the item in which is to be repaired, what potential problems and fixes could be. It will also link the report to the customer so the customer can be easily contacted about their item. The customer can also log on and access an account made when their details are taken in the shop. This can allow the customer to log on and see the status of the report for their item. It also lets the user to see a history of all the repairs they have had to all their items. It is simple and easy to use, clean and easy to understand interface for both the customer and shop staff. It also has all the necessary data about the items for repair and their owner's details. With a few simple clicks it should give u all the info needed about the item or their customers details, and help make contacting the owner easier.</p>	Cormac Hallinan
71	<p><b>HosCom</b></p> <p>My application is called HosCom and it used by hospital workers e.g. secretaries, nurses, doctors and medics. Patients can use the application as well but to a more limited extend. It is a hospital communication device were in real time efficiency they send forms to each other about patients to quickly get everything prepared for the patient. They can use the chat system to communicate as well to make sure everything is clearly documented.</p>	Ciaran Donoghue
72	<p><b>Weather Measurement Device</b></p> <p>Weather Measurement device incorporating Temperature, Humidity and atmospheric pressure. Using a Raspberry PI 2 electronic device in conjunction with software development skills learned in IT Sligo over the past 4 years. The device reads the measurements and then transports them to the web via software and is stored on a cloud database.</p>	Fergus McCormack
73	<p><b>The Need For Seed</b></p> <p>I have an interest in growing food as a hobby and I have started to learn how to collect seeds so I can grow more when the seasons permit. I came up with the idea for The Need For Seed which allows you to share seeds with other people when I started seeing increasing interest in growing your own food at home. After some research into other garden apps, I found a lack of sharing on information of seeds and came up with the idea of a seed swapping and seed sharing mobile app.</p>	Jonathan Gallagher



74	<b>RecuperApp</b> I would like my app to... (1) Inform the user as to how long they have been sober in terms of minutes, hours, days, weeks, months and years. (2) Inform the user, as to the length of time it will take for him/her to achieve his/her next milestone in sobriety. (3) Send a congratulatory notification to the user, whenever he/she achieves a milestone. (4) Allow the user to store the phone number of his/her AA sponsor, friends and/or counsellor. (5) Automatically put the user in contact with his/her AA sponsor, friends and/or counsellor, should he/she feel the urge to drink. (6) Log the user in to a support group website or a WhatsApp group page, if his/her contacts are unreachable.	Keith Mcmanus
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