

IT Sligo Engineering Expo

Thursday 7th May 2015

The Engineering Expo is a showcase of engineering projects and a careers fair in IT Sligo.

The objective is for students to present their award year projects in all engineering disciplines (Mechanical, Electronic, Mechatronic, Civil and Environmental). This year we have 90 projects on display. It is also an opportunity for companies to connect with students through the careers fair.

10.00am - 12.00pm	Showcase of final year projects
12.15pm - 12.30pm	Award Ceremony
12.30pm - 2.30pm	Industry careers fair & interviews



Our Student Projects

Bachelor of Engineering in Electronic Engineering (Level 7)

Year Coordinators: Eva Murphy, Fergal Henry

Demonstration Location: Electronic Laboratories (E2003/E2004)

No.	Project Name	Student
1	Home Automation System using Bluetooth (via Mobile phone)	Adrian Shakeshaft
2	Audio Visual Interface Device Display	Aidan Gilmartin
3	IR Sensor Controlled Car	Aiden Sweeney
4	Automated Rainwater Harvesting System	Alan Walshe
5	Remote Control Quadcopter	Albert Noguera Seudre
6	IR Sensor Safe-Parking Car	Cillian Dwyer
7	Control of a Lift	Daniel Perez Rodriguez
8	Plotting temperature Variation on a GLCD	Frank Kalyandu
9	X-Y Plotter for printing circuit boards	Graham Sales
10	Robotic Hand using Electronic servos	Ian Aherne
11	Dual-Axis Sun Tracking Solar Panel	Jason Cronnolly
12	Interface with a stepper motor	Joe Purcell
13	CAN Ammeter	Jonny O'Dwyer
14	Car Park Smart System	JP Collins
15	Ultrasonic Height Measurement	Katelynn Campbell
16	Fault-Code Generation & Reading	Mark Devins
17	IR sensor for counting and direction indication	Nathan Reilly
18	Vehicle Speed cum Odometer	Nicola Joyce
19	Traffic Light Control System	Padraig O'Malley
20	Solar Powered Power Bank Charger	Philip Lowe
21	Waveform Generation	Shara Regio
22	Greenhouse Monitoring & Control System	Simon Barry
23	Analog Deltabot	Tomasz Chanusiak

Bachelor of Engineering in Mechanical Engineering (Level 7)

Year Coordinator: Michael Moffatt

Demonstration Location: General Engineering Workshop (F0023)

No.	Project Name	Student
24	Oyster Shell Crusher	Jamie Flannery Michaela Niland Aoife Sheridan
25	CNC Routing Machine	Ahsan Bilal Ray Kennedy Aaron Rodgers Kevin Smith Conor Ward
26	Wind Powered Irrigation System	Bobby Barry Colin Conlon Joe Cooper Martin Haverty
27	Automated Capping Filling Machine	Niall Brogan Thomas Feehily Daniel Gannon Gary Harte
28	Wave Energy Converter	Alan Conboy Oran Gavigan Declan Gillespie Keelan Kelly
29	Palm Oil Press	Joan Pons Garrido Nathan Maire Juan Carlos Perez Bruno Silva
30	Pneumatic Go-Kart	Patrick Kelly Stephen O'Toole Jamie Shevlin Anthony Smyth
31	Hydraulic Briquette Press	Nicholas Murphy Gytis Spirgys Jack Winters

32	Shotgun Cartridge Separator	Stephen Loughnane Cian North Sean O'Hagan Niall Skinnader Aidan Ward
33	Micro Hydro Power Station	Sean Lydon Thomas McDonagh Sean Mitchell Adam Mullen Kealan Nesbitt

Bachelor of Engineering (Honours) in Mechanical Engineering (Level 8)

Year Coordinator: Sean Dalton

No.	Project Name	Student
34	Fan Blade Analysis With Respect to Air Flow & Fan Blade Design	Aidan Curley
35	Investigating The Relationship Between The Coefficient Of Lift And The Optimum Angle Of Attack For An Aerofoil Section Of A Horizontal Axis Wind Turbine	Anthony Mannion
36	The effect of processing conditions on the properties of bioresorbable PLA medical devices	Brian Creaven
37	Dynamic Modelling of a four stroke engine with a view to alleviate stress concentrations in a connecting rod.	David Lydon
38	Analysis of Inertia Forces in Internal Combustion Engines	Mark O Connor
39	Cylindrical Snap fit analysis	Nasser Al Ruqeishi
40	Finite element analysis of elastic plastic bending.	Nasser Alhinai

Bachelor of Engineering in Mechatronics (Level 7)

Year Coordinator: Niall Colleary

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

No.	Project Name	Student
41	Automated Coffee Bean Packager	Niall O'Reilly Colin Tempany Gabor Stefcsik
42	Automated Vehicle License Plate Recognition System	Marcin Targosinski Drew Monaghan
43	Automated Guitar Player	David Wynne Jason Salmon Jamie Clarke
44	Smart Home	Stuart Moynan Andrew McGovern
45	Egg Sorter	Matthew Curran Michael Burke Eimear Fitzsimons
46	Self Feeding Can Crusher	Ciaran McDermott Jack Harkin
47	Festo PLC Project	Darragh Gilmartin
48	Automated Block Sorter	Evan Roarke Myles Ruane Darren Beattie
49	Distance Monitoring and Control Car	Tony Taylor Gavin McMorrow
50	3D Printed Drone	Stephen Doherty Peter Gordon
51	Gas Detector	Dillon Gilhooley Jonathan Quinn
52	Project for industry partner Ophardt Hygiene	Diarmuid O'Malley

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

Year Coordinator: Marion McAfee

Demonstration Location: Mechatronics Project Room (E2008)

No.	Project Name	Student
53	Door Skin Fault Detection and Classification System	Daniel Irvine
54	Motion Capture Control of a Robotic Manipulator	John Cafferty
55	Heat Seeking Autonomous Vehicle	Patrick Griffin
56	Android Gyro sensor control of a vehicle with camera feedback	Robert Melody
57	Robotic Arm Control using Vision System	Stephen Gallagher

Bachelor of Engineering in Civil Engineering (Level 7)

Year Coordinator: Mel Casserly

No.	Project Name	Student
58	Building Information Modelling (BIM) for the project manager	Cathal Phibbs
59	The Building Regulations (Amendment) 2014	Colm McLoughlin
60	Modern technological advancements in topographical surveying	Conor Simmons
61	Point Cloud Surveying for Building Information Modelling (BIM)	Daniel Cannon
62	Bending and shear capacity of reinforced concrete beams	Gavin McNamara
63	Soil stabilisation using ground granulated blastfurnace slag	Silvia Alcaraz López

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

Year Coordinator: Bill O'Kelly-Lynch

No.	Project Name	Student
64	Construction of Embankments on Soft Compressible Soils	Brendan Geoghegan
65	The Potential for Hydraulic Fracturing in Ireland	Darren Reape
66	A Feasibility Study of a Medium Sized Low Head Hydroelectric Scheme on the River Shannon.	Kieran McCafferty
67	A Study of Engineered Cementitious Composite Concrete	Mark Dwyer
68	A Comparison of the Influence of Different Air-Entraining Agents on Fresh and Hardened Concrete	Michael O'Reilly
69	Optimisation of Sludge Management at Water Treatment Plants.	Padraig O'Reilly
70	Experimental testing of Ultra High Performance Fibre Reinforced Concrete (UHPFRC)	Sean Vesey
71	Analysis of wind turbine foundation loadings	Sergy Mokrij

Bachelor of Engineering in Environmental Engineering (Level 7)

Year Coordinator: Mel Casserly

No.	Project Name	Student
72	Testing the Water Parameters of Ash lane River and Compare to EU Standards	Louise Flynn
73	Cryptosporidium – report on the situation in Ireland: Regulations, potential treatment solutions and/or modifications to existing plants	Patrick Coll
74	Finding the optimum coagulant dosage using the Jar Test	Patrick Rouse
75	Design a small scale water treatment plant for a given location	Paul Mannion
76	U value calculation	Ray Kelly
77	Freshwater ecological analysis of Ash Lane stream	Roisin McManus
78	Production of a fire cert for an office block	Wesley O'Donnell

Our Visiting Companies

IT Sligo would like to welcome our visiting companies for taking time out of their schedule to visit IT Sligo's inaugural Engineering Expo in 2015. The company representatives will view the student projects and/or take a stand at the Careers Fair. Interviews can be arranged between the students and the companies.

No.	Company Name	Website
1	Abbott Diabetes Care, Donegal	http://www.abbott.ie/
2	Abbott, AIDD	http://www.abbott.ie/
3	Abbott, Devices	http://www.abbott.ie/
4	Abbvie	http://www.abbvie.ie/
5	Alfa Precision Limited	http://www.alphaprecision.ie
6	Ansamed	http://www.ventionmedical.com/
7	ATS Automation	http://www.automationtechnology.ie/
8	Bbraun	http://www.bbraun.ie/
9	Harmac Medical	http://www.harmac.com/
10	Hollister	https://www.hollister.com/
11	Hospira	http://www.hospira.ie/
12	Inblex Plastics	http://www.inblex.ie/n/
13	Intel	http://www.intel.com/
14	Johnson Controls	http://www.johnsoncontrols.ie/
15	Junior Achievements Ireland	http://www.jai.ie/
16	Lotusworks	http://www.lotusworks.com/en-ie/
17	Mergon	http://mergon.com/

18	Modular Automation	http://www.modularautomation.ie/
19	Optel Vision	http://www.optelvision.com/
20	Pharamceutical Stainless	http://www.pharmastainless.ie/
21	Portalis Ltd	http://portalis.ie/
22	Sennheiser	http://en-ie.sennheiser.com/
23	SF Engineering	http://sfengineering.ie/
23	SL Controls	http://slcontrols.com/
24	Stryker	http://www.stryker.com/en-us/glp/index.htm
25	Team Horizon	http://www.teamhorizon.ie/
26	Valeo	http://www.valeo.com/en
27	VistaMed Ireland	http://www.vistamed.net/
28	Ward Automation	http://www.wardautomation.ie/

Many Thanks

Thanks are due to the many students, staff and companies who contributed greatly to making this inaugural Engineering Expo a success. In particular congratulations to lecturer Mary Nolan for her enthusiastic commitment, drive and energy in coordinating the Expo. Special thanks to the judges of the Poster Awards:

Ms. Stephanie Donegan, *chairperson –Education Development & Quality Manager, IT Sligo, Chartered Engineer*

Dr. Pat Naughton – *Senior Lecturer, IT Sligo, Chartered Engineer*

Ms. Teresa Kelly – *Guidance Counsellor, Summerhill College, Sligo*

Mr. Martin Dolan – *Business Development Manager, Modular Automation, Shannon, Co. Clare*

Enjoy the Expo!

Trevor McSharry - *Head of Department of Civil Engineering & Construction, IT Sligo, Chartered Engineer*

Úna Parsons - *Head of Department of Mechanical & Electronic Engineering, IT Sligo, Chartered Engineer*