



Ireland**Skills**

NATIONAL COMPETITION 2016

“CIT is proud to host the IrelandSkills National Competition, and showcase the relentless commitment to the development of highly skilled craft persons.”

Tim O'Halloran, Chairperson- IrelandSkills Organising Committee



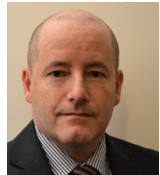
CIT IrelandSkills Organising Committee (left – right)

Back Row: Pat Twomey, Adrian McAuliffe, Michael Cotter, Noel O'Halloran, Patrick Crowley, Pat Forde, Michael O'Leary, Philip Mealy.

Front Row: John Bogue, Finbarr O'Keeffe, Geraldine Mahon, Tomás Reidy, Dr Brendan Murphy (President, CIT), Tim O'Halloran (Chairman), Michael Hourihan, Brendan Deane.

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CHAIRMAN'S WELCOME



I would like to extend a very warm welcome to the 2016 IrelandSkills National Competition finalists, their families, friends and employers. This annual event has been running in Cork Institute of Technology (CIT) since 1973 and is organised by the CIT IrelandSkills Organising Committee.

This year CIT plays host to nine skills which include Automobile Technology, Carpentry, Construction Plant Fitting, Electrical Installations, Industrial Control, Joinery, Metal Fabrication, Plasterwork, and Plumbing.

Approximately forty competitors from all over Ireland will compete for the Department of Education and Skills silver medal in their respective skill. CIT is proud to facilitate this competition along with its highly skilled competitors, who represent the very best in Irish Industry and education.

I would like to thank the sponsors for their generous support down through the years. I would also like to thank Dr Brendan J Murphy (President - Cork Institute of Technology), the heads of Faculty, School and Department, along with the technical, secretarial, catering, and support staff for their assistance.

Finally, I would like to extend a very special thank you to the organising committee and support staff for their outstanding effort in bringing the 2016 IrelandSkills National Competition to fruition.

Tim O'Halloran
Chairman – IrelandSkills Organising Committee

WELCOME TO CIT



As President of Cork Institute of Technology (CIT), I am pleased to welcome participants from all over Ireland to the finals of the IrelandSkills Competition 2016.

The standard and quality of craftsmanship exhibited in these competitions is always excellent, and makes one proud of our skills education not only here in CIT but throughout Ireland.

It is a source of further satisfaction to note the support from the employers of participants and the pride that they take in the achievements of their apprentices. I also commend the various sponsors who continue to support this competition over the years. The combination of SOLAS, our partners in the education and training of apprentices along with the institutes of technology have served Ireland well.

It is an honour to compete in the final of the IrelandSkills Competition. I know that it has taken much patience and training to reach the level of skill that these competitors have now achieved. I wish them all the very best in their respective competitions.

To all our visitors to the competition, I know that the skill and achievements of the competitors will demonstrate the high standards of education and training that all our apprentices undergo.

Dr Brendan J. Murphy
President - Cork Institute of Technology





I am pleased to congratulate all finalists who have qualified for the 2016 IrelandSkills National Competition.

Your achievement is a credit to yourselves, your parents, employers, trainers and lecturers.

The IrelandSkills competitions allow the country's most talented young people to hone their skills and compete for these prestigious national awards.

The organisation of IrelandSkills depends on collaboration and sound relationships between the partners in vocational education and training, Dublin Institute of Technology (DIT), Institutes of Technology Ireland, Education and Training Boards (ETBs), and SOLAS.

In particular, I want to thank Professor Brian Norton, President of Dublin Institute of Technology, and Dr Brendan Murphy, President of Cork Institute of Technology, for hosting IrelandSkills National Competition 2016. I would also like to thank the sponsors of these competitions - your generous support financially and through the supply of materials and equipment is greatly appreciated.

In August 2015, a 14-strong IrelandSkills team achieved 11th place overall at the 43rd WorldSkills Competition which was held in São Paulo, Brazil, winning two Gold medals and seven Medallions of Excellence. When you consider that Ireland was competing against 55 other countries, the scale of this achievement becomes apparent and it continues the trend of Ireland achieving outstanding results at WorldSkills.

There is a continued need for the recruitment, training and up-skilling of apprentices to meet the specific skill demands of the growing Irish economy. The achievements at WorldSkills and the IrelandSkills National Competition therefore not only highlight the world class skill levels that our young craft persons possess, but they also reflect the very high standards of our education and training system, which will further reinforce the growing Irish economy.

Kathleen Lynch TD

Minister of State at the Department of Health with special responsibility for Primary Care, Social Care (Disabilities & Older People) and Mental Health.

Gemma Linehan

Cecilstown, Mallow, Co. Cork
Cork Institute of Technology Phase 4

Employer: Donie Linehan

Cecilstown, Mallow, Co. Cork

Jason O'Sullivan

Glenflesk, Co. Kerry
Cork Institute of Technology Phase 4

Employer: Bowlers Garage

Ballycasheen, Killarney, Co. Kerry

Shane McGrory

Castlebellingham, Co. Louth
Dublin Institute of Technology Phase 6

Employer: Gerry Cumiskey Ltd

Dundalk, Co. Louth

Conor Whelan

Tara, Co. Meath
Limerick Institute of Technology Phase 6

Employer: Windsor

Clonee, Co. Meath



Peter Kenny
Chief Expert

Automobile Technicians are employed in franchised dealerships and non-franchised garages.

Companies with a large fleet of vehicles, such as the ESB, etc. employ many technicians and of course many start their own business.

This competition is divided into 4 different modules:

- > Engine mechanical and transmissions
- > Petrol and diesel engine management
- > Body electrics and brakes
- > Steering and suspension

The Competitors are marked on the following during each Module: their diagnostic abilities; ability to interpret written instructions and documents; report writing; making rapid calculations; working at speed and under pressure; accuracy of results from tests; safe work practices.

CARPENTRY

Daniel Murphy

Scotstown Road, Monaghan
Dundalk Institute of Technology Phase 6

Employer: David Norry Construction Ltd
Glaslough, Monaghan

Chris O'Connor

Glenmore, Co. Kilkenny
DFEi Phase 4

Employer: Alan Murphy
Georges Quay, Waterford

Edmond O'Sullivan Doherty

Slieverue, Co. Waterford
DFEi Phase 4

Employer: Suirside Construction Ltd
Airport Bus Park, Waterford



Pat Noonan
Chief Expert

A carpenter normally works using softwood, and is involved in the production and assembly of floors and roofs, fixing door frames and windows. Later in the building process a carpenter fits doors, skirting, and architrave.

When working with prefabricated components – such as timber framed houses – the carpenter's task is somewhat simpler, because it does not require as much layout work or the cutting and assembly of as many pieces.

Carpenters who work on home extensions need a broad range of skills. As part of a single job they might make partitions, put in doors and windows, build stairs, install cabinets and complete many other tasks.

Because these carpenters are so well-trained, they can often switch from residential building to commercial construction, depending on which offers the best work opportunities.

This year's task has three modules:

- > The first includes wall plate/framing
- > The second module involves the development and fitting of complex rafters
- > The final module contains a dormer window construction

CONSTRUCTION PLANT FITTING

Tomás Dillon

Glenamaddy, Co. Galway
Cork Institute of Technology Phase 6

Employer: Coffey Construction

Moanbuan, Athenry, Co. Galway

Garry Johnson

Caragh, Naas, Co. Kildare
Cork Institute of Technology Phase 6

Employer: BAM Construction

Kill, Co. Kildare

Eoin Reynolds

Coolronan, Ballivor, Co Meath
Cork Institute of Technology Phase 6

Employer: Boliden Tara Mines

Knocknumber, Navan, Co. Meath

Matthew Walsh

Athaboy, Co. Meath
Cork Institute of Technology Phase 6

Employer: Boliden Tara Mines

Knocknumber, Navan, Co. Meath



Pat Twomey
Chief Expert

The trade of Construction Plant Fitting (CPF) deals with the service, repair and diagnosis of technical concerns on machinery used in materials handling industries such as mining, road construction, manufacturing and forestry. In the National Skills Competition for CPF there are 4 work stations:

Plant Vehicles

Dismantle, inspect and reassemble an oil immersed in-board service brake system from a wheeled telescopic loader. Report on the task and carry out measurements as specified whilst strictly adhering to manufacturers requirements throughout.

Hydraulics

Dismantle a variable displacement hydraulic pump; report on its serviceability and reassemble following manufacturer's specifications.

Dismantle a hydraulic cylinder, carryout measurements to determine its maximum output force given a specific system pressure. Construct a hydraulic circuit incorporating a fixed displacement motor. Criteria are given on other components to be included in the circuit.

Plant Electricity

On a common rail diesel engine, interrogate the engine control system to determine the reasons for a malfunction. Examine live data and carryout tests to rectify the operating system.

Dismantle a high speed gear reduction starter motor. Examine the component parts for serviceability when compared to manufacturer's specifications.

Reassemble the unit and bench test for correct operation.

Transmissions

Dismantle a clutch assembly from a power shift transmission system.

Replace seal assemblies and test the unit for correct operation.

Assemble whilst strictly adhering to manufacturers specifications throughout

ELECTRICAL INSTALLATION

Colin Clerkin

Shankill, Shercock, Co. Monaghan
Dundalk Institute of Technology Phase 6

Employer: **Paul Clarke**

Cootehill, Co. Cavan

.....

Gary Conroy

Clonee, Dublin 15
Dublin Institute of Technology Phase 4

Employer: **Jones Engineering Ltd**

Grand Canal Quay, Dublin 2

.....

Desmond Phillips

Huntstown, Dublin 15
Dublin Institute of Technology Phase 6

Employer: **Ascension Lifts Ltd**

Lower Ballymount Rd., Dublin 2

.....



Paul Marah
Chief Expert

This competition reflects traditional, current and emerging technologies used in the electrical contracting industry. Competitors complete test projects designed for typical commercial or domestic type of electrical installations.

The following skills are required:

- > Measuring, marking and installing equipment and wiring systems
- > Wiring and connecting control devices, consumer appliances and protective equipment
- > Wiring and connecting a complete channel of cabling infrastructure
- > Manual bending of PVC and Metal Conduit
- > Sawing, drilling, and de-burring
- > Assembling materials made from metal and plastic

Oliver Dunne
Palmerstown, Dublin 20
Dublin Institute of Technology Phase 4

Employer: **ESB Networks**
27 - 28 Lr Fitzwilliam Street, Dublin 2

Brian Kearney
Kilnantic, Rathangan, Co Kildare
Dundalk Institute of Technology Phase 6

Employer: **Bord na Móna**
Edenderry Power, Co. Offaly

Jacob Lennon
Killaloe, Co. Cavan
Limerick Institute of Technology Phase 6

Employer: **Asecure Ltd**
Grange Road, Ballina, Co. Tipperary

Dan Phillips
Kellystown Rd., Rathfarnham, Dublin 16
Dublin Institute of Technology Phase 4

Employer: **ESB Networks**
27 - 28 Lr Fitzwilliam Street, Dublin 2



Colm Agnew
Chief Expert

The requirements for Industrial Control cover elements from electrical installation works and automation control. The category requirements include the basics of electrical and automation installation techniques.

Competitors must install conduits, cables, devices, instruments, automated devices and control centre fittings quickly and safely.

Then they design circuits and parameters, programme and implement the programmable logic controller to a given specification.

This year's project simulates the function of an automatic barrier system for a car park. The competitors are required to mount, install and wire the control panels, cable tray's, ducting, cables sensors and accessories as pre a given specification.

The project also includes the use of a HMI (Human Machine Interface) for a status screen to give real time status information on the process. A manual operation screen is also provided which gives the operator the ability to stop the process at any time.

Finally the competitors must then program and commission the complete system using a laptop and specific Siemens application software.



Cian Mulligan

Redgap, Rathcoole, Co. Dublin
Galway-Mayo Institute of Technology (Student)

Oisín O'Brien

Donore, Naas, Co. Kildare
Dundalk Institute of Technology Phase 4

Employer: Séamus O'Brien

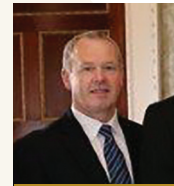
Donore, Naas, Co. Kildare

Bryan Wyer

Ballicknahee, Clara, Co. Offaly
DFEi Phase 4

Employer: John Sisk & Son

Naas Road, Clondalkin, Dublin 22



John Joe O'Reilly
Chief Expert

This year's IrelandSkills joinery competition final comprises of two modules.

The first is a bespoke four panel door with a diamond shaped glazed internal section. The second module is a 3D piece to reflect international competition trends which is a base stand for the door.

Both modules should be securely glued together and have a fine finish to display the wood grain. Competitors are judged on their ability to complete the drawing, have accurate internal joint construction, correct measurements, attractive external joint appearance and they must conform to all the plan details.

Marks may be deducted if competitor has to replace a piece of timber. In Ireland, Joinery is combined with Carpentry during apprenticeship training. Common projects in employment in Joinery include working as a joiner to manufacture doors, windows, stairs, shop fitted units, and to construct kitchen and wardrobe units. Other related skills/learning include installation on site of the various joinery items produced.

METAL FABRICATION

Aaron Ronan

Brickhills, Gaybrook, Mullingar, Co. Westmeath
Cork Institute of Technology Phase 4

Employer: Ronan Engineering

Castletown Geoghegan, Mullingar, Co. Westmeath

Shane Carroll

Milford, Charleville, Co. Cork
Cork Institute of Technology Phase 4

Employer: BCD Engineering Ltd

Railway Road, Charleville, Co. Cork

John Casey

Ballinagool, Croagh, Co. Limerick
Cork Institute of Technology Phase 4

Employer: Foynes Engineering Ltd

Foynes Harbour, Co. Limerick

Sonny Hassett

Ballydehob, Co. Cork

Employer: Bowens Forge

Rathura, Schull, Co. Cork

John Leahy

Killeens, Co. Cork
Cork Institute of Technology Phase 4

Employer: Monard Engineering Ltd

Mayfield Bus Park, Mayfield, Cork

Diarmuid O'Regan

Monkstown, Co. Cork
Cork Institute of Technology Phase 4

Employer: BMD & Company Ltd

Little Island, Co. Cork



Tim O'Halloran
Chief Expert

The competition task requires interpretation of engineering drawings to lay out, cut, shape and accurately assemble the test project to specified tolerances.

The test project will require the competitor to demonstrate skills such as development of pipe and transition pieces, bending of intricate shapes, mathematical ability and the cutting & welding of steel plate.

Competitors are judged on their ability to fabricate and assemble the test project to specific dimensions which can have a general tolerance ranging from +/- 0.5mm to +/- 2.0mm.

This involves forming steel plate, completing MMA, TAG and MAG welding to a designated position, size and length and the ability to control the distortion of steel plate after cutting and welding.

Common jobs/employment in metal fabrication cover a wide range of industries which include; fabricate of steel substructures for roofs, buildings and halls working in building construction, fabrication of vessels and pipe structures for the agricultural & dairy industries, plus the pharmaceutical, chemical, food and beverages industry.

Other related skills/learning includes IT skills for AutoCAD and Inventor 3D mechanical design.



PLASTERWORK

Stephen Murray

Cullies, Shercock, Co. Cavan
Waterford Wexford Education & Training Board Phase 2

Employer: **Martin Murray**

Cullies, Shercock Co. Cavan

Eoin Tuohy

Dromore, Feakle, Co. Clare
Waterford Wexford Education & Training Board Phase 2

Employer: **Michael Tuohy**

Lisduff, Tulla, Co. Clare

John Woods,

Tallanstown, Dundalk, Co. Louth
Waterford Wexford Education & Training Board Phase 2

Employer: **Derchill Ltd**

Ashbourne, Co. Meath



Joe Clarke
Chief Expert

The work of a Plasterer includes the application of plaster to internal and external wall surfaces and ceilings to produce a seamless, fine-finished surface.

Plastering also involves the application of protective and decorative coats of cement-based and similar materials to external surfaces of buildings.

Additional work requires the preparation of surfaces by fastening metal or plasterboard to form a key or background for plastering.

Individual craftpersons often specialise in particular skills such as mouldwork slating, tiling suspended ceilings and metal systems.

PLUMBING

Aaron Cassels

Sallins, Co. Kildare
Dublin Institute of Technology
Phase 4

Employer: **H A O'Neill Limited**
Grand Canal Quay, Dublin 2

.....

David Donegan

Baltinglass, Co. Wicklow
Waterford Institute of Technology
Phase 6

Employer: **Keltic Renewables**
Ballylunan, Co. Laois

.....

Eoin Lisibach

Castlebar, Co. Mayo
Dundalk Institute of Technology
Phase 6

Employer: **Walsh Mechanical Engineering Limited**
Ballinrobe, Co. Mayo

.....

Conor McNeely

Ballyshannon, Co. Donegal
Athlone Institute of Technology
Phase 4

Employer: **Adrian Sweeney**
Dungloe, Co. Donegal

.....

Ronan Murphy

Rhode, Co. Offaly
Athlone Institute of Technology
Phase 4

Employer: **Lynskey Engineering Ltd**
Oak Close, Dublin 12

.....

Peter Whittle

Ferrybank, Waterford
Cork Institute of Technology
Phase 4

Employer: **H A O'Neill Limited**
Grand Canal Quay, Dublin 2

.....



Fergus McGuinness
Chief Expert

The work of a Plumber is varied with a number of different skill sets attached.

The knowledge of the Plumber covers a wide range of topics which include: heating, hot & cold water supplies and sanitations systems, and the fixing of all sanitary appliances.

The competitors who have been successful in reaching the National Competition Finals will be examined on the piping aspect of these systems. The materials used will expose the competitor to their knowledge in the accurate installation of these materials and the skill set that they learnt in their apprenticeship to date.

MECHATRONICS



Niall Morris
Chief Expert

Mechatronics is a multi-disciplinary skill that requires expertise in mechanical set-up, electro-pneumatic systems, sensor technology, electrical systems, safety systems and the programming of PLC controllers.

Technical skills required:

- > Alignment and set-up of an assembly process
- > Wiring and connecting sensors, electro-pneumatics and controllers
- > Pneumatic assembly
- > Programming a PLC to achieve the desired manufacturing process
- > Ability to work in a team in a safe manner

This competition will be held at a later date.

BEAUTY THERAPY



Tara O'Halloran
Chief Expert

The beauty therapist is a specialist in skin and body care, massage and makeup. Beauty therapists are able to plan, apply and market face, body, feet and hand treatments and makeup. They can provide advice on how to use colours, find a personal style, look after your skin and body, and how to choose and use skincare products. Beauty therapists' hands are important tools but they also use technical equipment, continually developed by the industry. Beauty therapists also retail skincare and makeup products.

Providing treatment to clients requires knowledge of hygiene, anatomy and physiology, and skin histology. In order to provide quality care for their clients, beauty therapists must know about the ingredients used in cosmetics, and about products, skincare methods and beauty equipment and how they affect the skin and body. Giving advice on skincare requires knowledge of nutritional science, the importance of exercise, skin conditions and hygiene.

Beauty therapists must also demonstrate understanding of how electrical devices work in order to avoid endangering customers' health and safety when applying treatments.

**Competition to take place February 2016
Kerry ETB, Tralee, Co. Kerry**

TOOLMAKING/PLASTIC DIE ENGINEERING



Stephen Reid
Chief Expert

Toolmaking is high precision engineering, and involves the production and maintenance of industrial tooling to produce plastic and metal components in moulds and press-tools, the precision location of parts in jigs & fixtures and the production of special purpose machines.

Competitors are assessed on their ability to interpret engineering drawings, produce the Core and Cavity on a milling machine and surface grinder, the cutting and grinding of Ejector Pins, and assembly of the test piece.

Competitors are judged on their ability to machine to tolerances +/- .02mm, produce good surface finish, attention to detail and produce a flash free plastic component. Marks may also be awarded for speed of completion but can be deducted if competitor has to replace a piece.

Competition will take place early 2016 in IT Sligo

INTRODUCING WORLDSKILLS



IrelandSkills Competition

Annual National Competitions have been organised by the Department of Education and held since 1956/57 with approximately 20,000 apprentices/ technicians participating. Up to the early 1970's the competitions were mainly held in Colleges of Technology and Vocational /Technical Schools. With the transfer of apprentice programmes into the new Regional Technical Colleges (RTC) in the early 1970's, the RTC's mainly took over the running of the competitions with the Colleges of Technology. Today the competitions are held in Institutes of Technology (IOT) and in some Colleges of Further Education (CFE). The competitions were originally known as the National Apprentice Competitions but are now called IrelandSkills Competitions.

Competitors who compete in the IrelandSkills and WorldSkills Competition are selected from their respective trade background, based on their competence and ability to complete test projects to the highest international standards, under pressure from fixed time schedules and a requirement for precise dimensions and controls.

WorldSkills Competition

In the 1930's a National Skills Competition was held in Germany and in the late 1940's a competition was held in Spain. However the first recorded International Trade/Skills Competition was held in Madrid, with Spain and Portugal participating.

The Spanish government actively promoted the competition through the embassies and diplomatic corps in Madrid. They also invited all the accredited ambassadors to visit the competitions and actively promoted the idea of International Skills Competitions. By 1953 (3rd International Competition) the number of participating countries had grown to include France, Germany, Great Britain, Morocco, Portugal, Switzerland and Spain.

In 1956, Ireland through the Department of Education became the 10th member of the new organisation IVTO (International Vocational Training Organisation) and participated in the competitions for the first time in 1957 with 4 competitors. Ireland has participated in every competition since then and has hosted the competition twice, in Dublin (1963) and Cork (1979).

During the period 1957 to 2013 (37 Competitions), 695 competitors have represented Ireland and won a total of 191 medals (59 Gold, 53 Silver and 79 Bronze).

Up to 1961, the competing countries were mainly European with the exception of Morocco (1953, 1955) who at that time was a North African Spanish Protectorate. In 1962, Japan participated in the competition for the first time and the IVTO now evolved into a world organisation. The organisation has grown over the years, changed its name and is now known as WorldSkills International, with a membership of 60 countries, holding biennial skill competitions and is engaged in other skill promotion activities around the world.

44TH WORLDSKILLS COMPETITION

Dear 2016 finalists,

It is proposed to send a team of up to 20 competitors to the 44th WorldSkills Competition which will be held in Abu Dhabi, United Arab Emirates, from 14 – 19 October 2017.

The Irish WorldSkills competitors will be selected from the 2016-2017 National Skills finalists.

There is an age requirement for all WorldSkills competitions and competitors must not reach their 23rd or 26th birthday in 2017.

The selection process will commence in early 2017. On completion of the 2017 National Skills competitions IrelandSkills Council 2017 will review the performance of competitors in their skills.

John Twohig
Chairperson
IrelandSkills Council



Ireland**Skills**