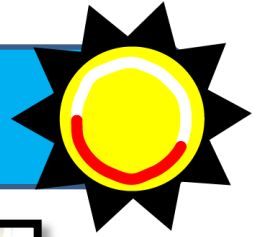


Primary Engineer Programmes

The first steps...



Early Education Centres

Primary Engineer

Secondary Engineer

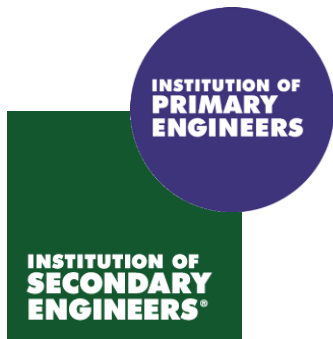
Scottish Engineering Leaders Award

Institution of Primary Engineers

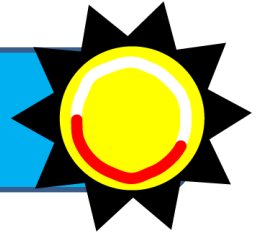
Institution of Secondary Engineers



Scottish  Engineering



Primary Engineer Programmes



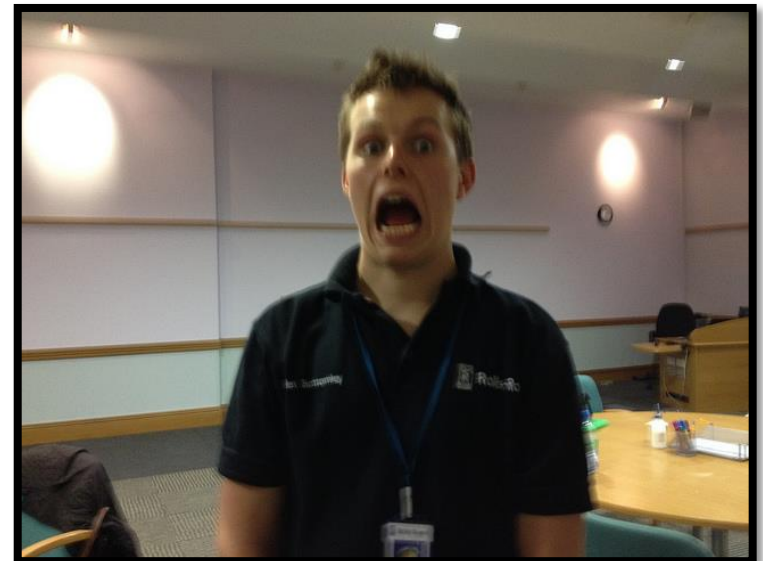
Numbers over the last 3 years

- ▶ 2 375 Schools
- ▶ 3 306 Teachers
- ▶ 71 000 Pupils
- ▶ 810 Engineers Registered
 - ▶ 598 engineers attended a full days training course with a teacher
 - ▶ 30 engineers registered last week.

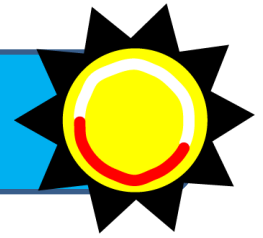


This calendar year:

- ▶ 690 Schools
- ▶ 1 010 Teachers
- ▶ 22 000 Pupils
- ▶ 967 Engagements with engineers



Primary Engineer Programmes



Gender

- ▶ Whole class activities
 - ▶ Primary Engineer Regional Finals 52% girls
 - ▶ Scottish Engineering Special Leaders Award Winners 75% girls

SPRIT

**Doonfoot crowned
Apprentice Level 1
National Champions 2013!**

Senna Carron and Lucy Paterson from Doonfoot Primary School in South Ayrshire, were crowned 15th year's National Champions of Apprentice Level 1!

“Senna and Lucy were enthusiastic about the Primary Engineer project right from the start. They worked hard together to create a range of things for their class to make. One day they were made happy when they were asked to make a device that they were both happy with. The girls made a computer case to carry their cell top in their class. Senna and Lucy practiced whether they only needed to use half parts of the case to see if their design would work or only use the top of the case to see if their design would work. Senna and Lucy were then told that they wanted to design and build their own design to make an object for a friend. They really enjoyed taking through their results with their classmates. An action figure was made and they were given their own. They were very happy with the what they were to do as the girls found that their design was working and were so proud of them when they were awarded in the award ceremony.”

*Jan McEwan, Classroom teacher
Doonfoot Primary School*

Girl Power

**Scottish Engineering
Special Leaders Award
2013/14**

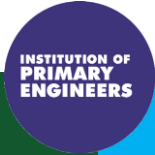


Name: Ashli Ghazali
Date of Birth: 27 September 2002
Gender: Male
Year: 10/11
School Name: Doonfoot Primary School
Which engineer inspired you? or invent a machine:
What is the name of the company your engineer works for? or what Agricultural Engineers

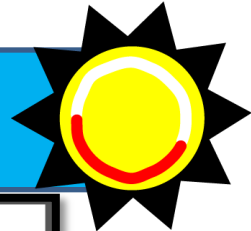
If you have trouble with lighting sparklers this can solve your problem. Just by pushing a button your sparkler can be lit in seconds. It is available in all stores just for £20.19p. The Automatic Sparkler will keep when the battery is low so then you know when to change the batteries. Adults don't need to light your sparkler because push the button it will be lit. The green side lights up when your sparkler is fine. But when it is at the red you need to change your sparkler. It is suitable for ages 9 and over. So buy your Automatic Sparkler today.

**Scottish Engineering
Special Primary Leaders Award 2012**

"What would I do if I was an engineer in Scotland?"



Primary Engineer Programmes



INSTITUTION OF SECONDARY

Course Title: Structures and Mechanisms with Basic Electricity
Course Code: S-106-16

Course Description:
This course is designed to provide students with a practical understanding of the principles of structures and mechanisms, and the basic principles of electricity. The course is delivered through a combination of practical work and theory.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.

Course Description:
Product Design Enterprise Project. Designing a small model plane to follow in a specific receiver, aerobically, aerodynamically or based on simple aerodynamic design, manufacture and test the plane. Enterprise skills to bring the product to market.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.

During the course teachers will work with other STEM teachers in a cross-curricular project with the goal of creating an area of personal excellence for an enterprise company. They will understand the design brief and specification and use the supplied IMB resources to deliver the project to their students which combines the STEM subjects. They will investigate manufacturing techniques including CAD/CAM to produce manufacture of the final design and enterprise skills to market the final product.

Course Title: Secondary Engineer Aerospace Project
Course Code: S-4-8-8

Course Description:
Product Design Enterprise Project. Designing a small model plane to follow in a specific receiver, aerobically, aerodynamically or based on simple aerodynamic design, manufacture and test the plane. Enterprise skills to bring the product to market.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.

Course Title: The Institution of Primary Engineers
Course Code: P-1PEng

Course Description:
This course is designed to provide students with a practical understanding of the principles of structures and mechanisms, and the basic principles of electricity. The course is delivered through a combination of practical work and theory.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.

Course Title: Secondary Engineer Computer Aided Design and Manufacture
Course Code: S-33

Course Description:
This course is designed to provide students with a practical understanding of the principles of computer aided design and manufacture. The course is delivered through a combination of practical work and theory.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.



Course Title: Structures and Mechanisms with Basic Electricity
Course Code: S-106-16

Course Description:
This course is designed to provide students with a practical understanding of the principles of structures and mechanisms, and the basic principles of electricity. The course is delivered through a combination of practical work and theory.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.

Course Title: Secondary Engineer Aerospace Project
Course Code: S-4-8-8

Course Description:
Product Design Enterprise Project. Designing a small model plane to follow in a specific receiver, aerobically, aerodynamically or based on simple aerodynamic design, manufacture and test the plane. Enterprise skills to bring the product to market.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.

Course Title: An Element of Control - Programming and Electronics
Course Code: PE-01

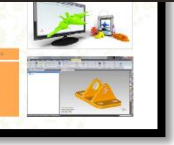
Course Description:
This course is designed to provide students with a practical understanding of the principles of programming and electronics. The course is delivered through a combination of practical work and theory.

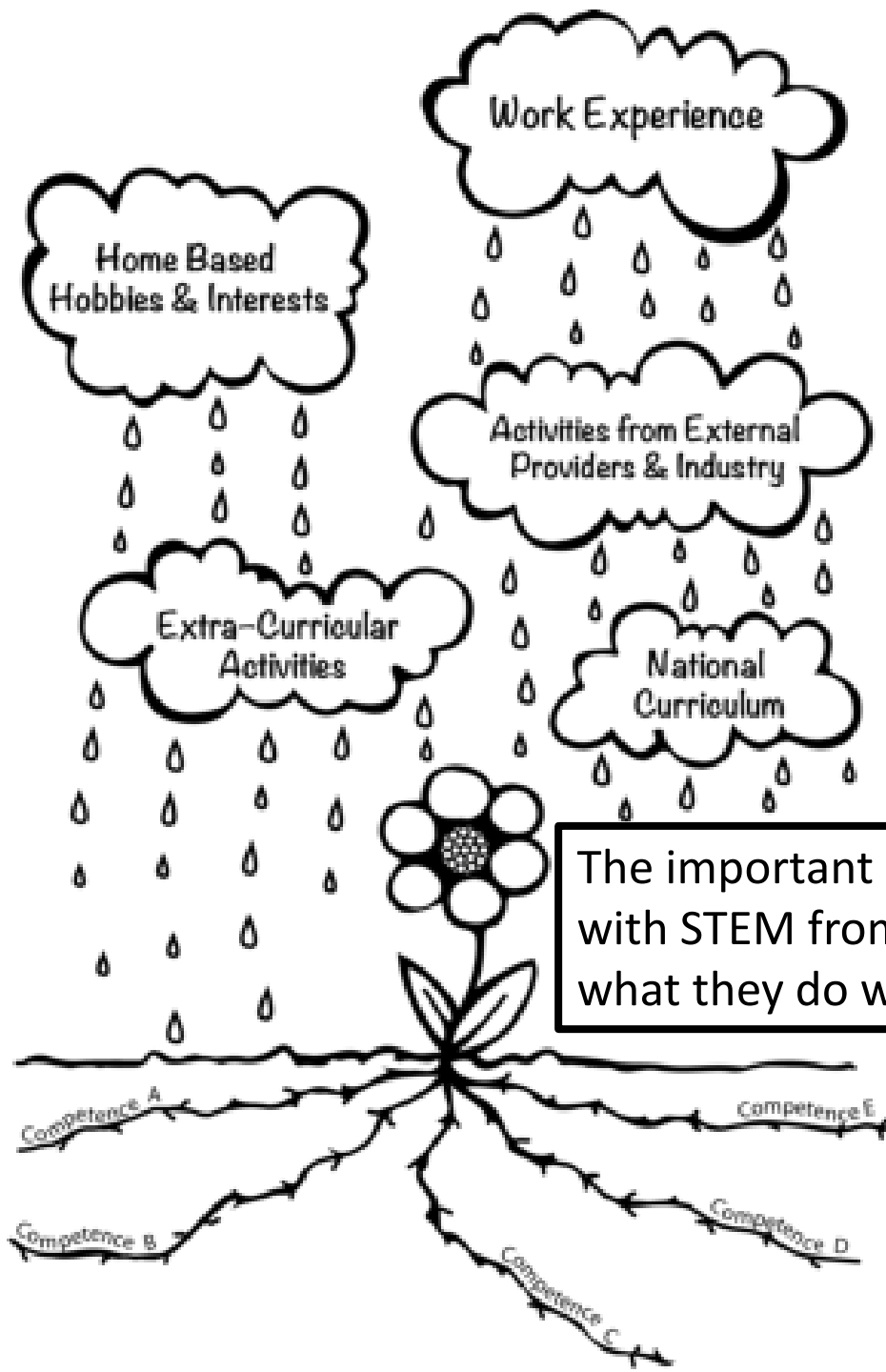
Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.

Course Title: Secondary Engineer Computer Aided Design and Manufacture
Course Code: S-33

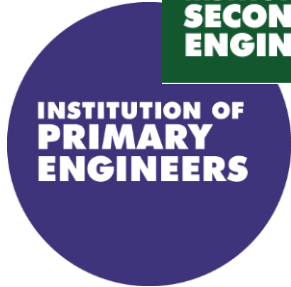
Course Description:
This course is designed to provide students with a practical understanding of the principles of computer aided design and manufacture. The course is delivered through a combination of practical work and theory.

Teachers Experience and Outcomes:
Teachers will have the opportunity to build their pupils' experience of Primary Engineer and Secondary Engineer. The progress of this project enables pupils to make the connection between the subjects in order to create a more effective outcome. Teachers will be introduced to the 3-emp project which will see them deliver a cross discipline project to their pupils. The pupils will operate in a cross-disciplinary and acquire STEM expertise in solving the problem.





The important element of engagement with STEM from a pupils perspective is what they do with it!



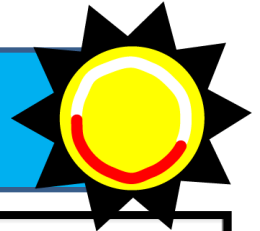
- ▶ School Based Committee
- ▶ Certificates
- ▶ Engineering Themes
- ▶ Members, Chartership, Fellows and Honorary Members
- ▶ School planning software



Lower Secondary	Upper Secondary	SCQF Level 5 Modern App Requirement	UK SPEC - Chartered Engineer
<p>Knowledge and understanding to apply technical and practical skills</p> <p>A1 Demonstrating the cross curricular range of engineering techniques and skills which are known to work and apply them to a range of projects.</p> <p>A2 Use an appropriate level (to the pupil) of Science knowledge and understanding and apply it to projects.</p> <p>A3 Use an increasing level of mathematical knowledge and understanding and apply it to a range of projects.</p> <p>A4 Use an appropriate level (to the pupil) of Art, Design and Technology knowledge and understanding and apply it to a range of projects.</p>	<p>Knowledge and Understanding (K&U)</p> <p>A1 Use creative and innovative engineering techniques and skills and apply them to a wide range of projects.</p> <p>A2 Use an extensive level of mathematical knowledge and understanding and apply it to a wide range of engineering projects.</p> <p>A3 Use an extensive level of Science knowledge and understanding and apply it to a range of engineering projects.</p> <p>A4 Use an extensive level of Art, Design and Technology knowledge and understanding and apply it to a range of projects.</p>	<p>Knowledge and Understanding (K&U)</p> <p>K&U - Demonstrate and/or work with: Knowledge and understanding of basic processes, materials and terminology.</p> <p>PA&KU - Complete some routine and non-routine tasks using knowledge associated with a subject/discipline.</p> <p>CNS - Use a range of numerical and graphical data in straightforward contexts that have some complex features.</p>	<p>A1 Use a combination of general and specialist engineering knowledge and understanding to address the application of existing and emerging technology</p> <p>A2 Engage in the creative and innovative development of engineering technology and continuous improvement systems.</p>



Primary Engineer Programmes



INSTITUTION OF PRIMARY ENGINEERS

INSTITUTION OF SECONDARY ENGINEERS

HOME ABOUT LEARNING & RESOURCES MEMBERS NEWS CONTACT

HONORARY MEMBERS

Here you will find a list of our honorary members, who have been elected for their continuous contribution and engagement with the Institution of Primary Engineers. Every one of them started out at Primary School, and you can find out more about their journey towards where they are now!

STEPHEN TETLOW MBE
Chief Executive, iMechE
When I was at Primary School...
[Read more](#)

DR NINA BAKER
Engineering Historian and Consultant on Gender Diversity in STEM
When I was at Primary School...
[Read more](#)

GORDON MASTERTON
Chairman, Scottish Engineering Hall of Fame
When I was at Primary School...
[Read more](#)

PATRICK KNIVETON
Former President iMechE and Head of Engineering Improvement at Rolls-Royce Marine Power
When I was at Primary School...
[Read more](#)

IAIN MACLEOD
President of IESIS
When I was at Primary School...
[Read more](#)

ROMA AGRAWAL
Structural Engineer
When I was at Primary School...
[Read more](#)

DR COLIN BROWN
Director of Engineering, iMechE
When I was at Primary School...
[Read more](#)

ED MCCANN
Director, EXPEDITION
When I was at Primary School...
[Read more](#)

JENNIFER MCGINLEY
Babcock Graduate Development Programme
When I was at Primary School...
[Read more](#)

FOUNDING FUNDERS

Primary Engineer Programmes
the Employer

OUR SUPPORTERS

Primary Engineer Programmes
...the first step

Save Print Form

Save this form to your personal computer before adding text content.

Personal Public Engagement Record

Date of Engagement:	24 MARCH 2012	Contact name:	Susan Curtis
Your name:	Christiana L Okikara-Blackburn	Contact number:	0161 2057507
Occupation:	Geologist/Engineering Geologist/Geotechnical	Project name:	Primary Engineer National Finals 2012
Company:	On a career break	Age range of participants:	4-11
Visit to:	Primary Engineer National Finals 2012	Percentage girls:	40 %
	Manchester Communication Academy Slicester Drive Harpurhey Manchester M40 9NT	Percentage boys:	50 %
		Total pupil numbers:	1000+
		Number of teachers:	
Event Address:	M40 9NT	Rate your enjoyment level:	1 Excellent
		Your hours:	9.30 - 1.30

Comments, positive and negative you would like us to be aware of:

It was a sight to behold - ABSOLUTELY AMAZING!! Thank you very much for inviting me to the event - I had a great time. It was wonderful to see the children's creativity and their happiness from their achievements. The organisers from Primary Engineer deserve a special well done, nothing was too much trouble!
A loud speaker for the welcome address would be helpful.

Please help us to monitor member involvement with schools. Feedback will help us to learn from your experience and monitor engagement. We only require the data in this section which will be treated in accordance with the Data Protection Act 1998. Once filled please use the email submit button. Use the remainder of the form to act as a record for your own personal development. Many thanks from Primary Engineer

[Submit by Email](#)

Project Pre-planning, Delivery and Evaluation

Initial contact made: Date Age group and activity agreed: Date

Visit arrangements made: Date

Pre-visit comments (expectations, preparation, checklist):

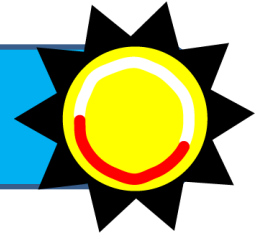
Page 1 Primary Engineer 2012

INSTITUTION OF
PRIMARY
ENGINEERS

INSTITUTION OF
SECONDARY
ENGINEERS

Primary Engineer Programmes

The first steps...



Early Education Centres



Primary Engineer



Institution of
**MECHANICAL
ENGINEERS**

Secondary Engineer



eef The
manufacturers'
organisation

Scottish Engineering Leaders Award

Scottish Engineering

Institution of Primary Engineers



Institution of Secondary Engineers



INSTITUTION OF
PRIMARY
ENGINEERS



INSTITUTION OF
SECONDARY
ENGINEERS



Rolls-Royce



THALES

WITH THANKS

2H Offshore • 3D Systems • 4C Design • AD Sprinkler Protection Ltd • AAF Ltd • Abbott Risk Consulting • Ace Winches • Acies Group • ADL • AEG Project Solutions Ltd • Aerospace UK Aggreko • Arcelle Ltd • Air Liquide SA • Aker Solutions • Aker Oil & Gas • Alexander Dennis Ltd • Allied Vehicles • Allspeeds Ltd • Alstom • Alstom Power-Thermal Services • AMEC • AMEC Oil & Gas Arney • AMS Neve Ltd • Anglo-Eastern Ship Management • Angus & Dundee College • APPLITEK Ltd • Appris Charity Ltd • Ardagh Group • ARUP • Ashleigh Building • Assystem UK Astrium Atkins Aerospace • Atkins Global • Ayr College • BA • B.M.C. Engineering Solutions Ltd • Babcock International Group • Babcock Marine & Technology Division • BAE Systems • Baker Hughes Balfour Beatty • BAM Nuttall Ltd • Bank of Scotland • Basildon Excellence Panel • Bibby Offshore • Blyth & Blyth • BP • BP Exploration Operating Company Ltd • BT-Openreach Building Services Design Engineering • Business Stream • Castle Precision Engineering • Centrica Energy E&P • Chartered Institution of Highways and Transportation • Chemring Energetics UK Chevron Energy Technology Company • Chevron Upstream Europe • CITB-Construction Skills • City Energy Solutions • Clearwater FPC Ltd Montrose • CLOCH Solicitors • Clyde Bergemann Ltd Clydeport • ClydeUnion Pumps • Comhairle nan Eilean Siar • COGENT • ConocoPhillips (UK) Ltd • Cummins • Cumnock College • Daniel Muldoon-Smith Ltd • Darlington Borough Council Datec Technologies Limited • David Ritchie Implements Ltd • DeepOcean • Delphi Diesel Systems • Design and Technology Association • Det Norske Veritas BV • Devro Scotland Ltd DH Engineering Scotland Ltd • DIAGEO • Diesel Line • DIODES Zetex Ltd • Dolphin Drilling Ltd • Doosan Babcock • DSSR • Duco Ltd • Dulas • Durham University • East Ayrshire Council EDF Energy • EEF Manufacturers' Organisation • Egger • Electric Power Research Institute • eLight Solutions Ltd • Eling Klinger (GB) Ltd • Energy Combined Power Ltd • Energy Institute Energy Technology Centre • Engineered Capabilities Ltd • Engineering UK (Tomorrow's Engineers) • Enwise (UK) Ltd • EP Consult Energies Ltd • ERA Technologies Ltd • Expedition Engineering Expro Group • Expro North Sea Ltd • Exxonmobil • Fearsomeengine • Fife Council • First Subsea Lancaster • FMC Technologies • Ford Aerospace • Ford Motor Co. • Forth Valley College Foster Wheeler Energy Ltd • FoundOcean • Futaba Tenneco UK Ltd • GN Systems Ltd • GT Group • Galiford Try • Gamesa • Gamesa Offshore Wind UK • Gas Measurement Instruments Ltd GE Caledonian • GE Lighting • GE Oil & Gas • GE Wellstream • Gentech Int. Ltd • GFB Buildings LTD • Glasgow Caledonian University • GN3D Engineering Ltd • GSK • Halliburton Manufacturing Services Ltd • Hammermon of Glasgow • Hawkins & Associates Ltd • Health & Safety Executive • Health & Safety Laboratory • Heattech Ltd • Heriot Watt University Higgins Holt Process Systems • Highland Council • HJ Heinz • Holland America Line • Hook Marine Ltd • Howden Process Compressors • HSB Engineering Insurance • HYSPEC Engineering IES Ltd • Imperial College London • Institution of Civil Engineers • Institution of Engineering and Technology • Institution of Engineers and Shipbuilders in Scotland (IESIS) • Institution of Lighting Professionals Institution of Mechanical Engineers • Institution of Railway Signal Engineers • Intel • J2 Engineering Niven Plant Hire • Jacobs James Fisher Defence • James Walker Devol • JG Maritime Engineering Ltd • JLR • John H McNaie Ltd • John M Henderson • Katmex Ltd • KCP • Laing O'Rourke • Lawrence Energy • Life Scan • London Offshore Consultants • London Underground Ltd Macpherson Contracts • Maersk Oil UK • Magnox Ltd • Mahle • Manchester College • MBDA UK Ltd • Meggit Polymers and Composites • MGM Engineer Services Ltd • Ministry of Defence Morgan Sindall • Morrison Construction • MOTT MacDonald • MWH • NA Consultants Group • National Grid • National Nuclear Laboratory • National Oilwell Varco NATS Natural Environment Research Council • Nestlé • Network Rail • New Acoustics Ltd Clydebank • Newcastle City Council • Newcastle University • NHS Innovations North • Nick Smith Associates Ltd Nissan • NMC Nomenca Northern Rail • North Ayrshire Council • Northumbria University • North Tyneside Council • NSK Bearings Europe Ltd • NTR Ltd • Nuclear Graduates • Nuvia Ltd Ocean Engineering International Services Ltd • Oceanering Umbilical Solutions • OCR • Old States Industries • Oldham Business Leadership Group • Open Eng Solutions • OPTOS Parsons Brinckerhoff • PD&MS Energy • PDI Ltd Aberdeen • PDL Solutions • Pearson Engineering • Petamis Wave • Power Ltd • Penman Engineering Ltd • Pentair Thermal Management Peter Dukes Associates • Petrofac Offshore Engineering & Operations • Pipeline Induction Heat Ltd • PJS Fluid Technologies • Plymouth University • Port of Tyne • Product Sprout • Prospect Prospect Flow Solution • Quick Hydraulics • Randstad • REACT Engineering • Realistic Engineering Analysis Limited • Red Bull Infiniti F1 Redacre Consulting Ltd • RES Ltd • RES Offshore Robert Gordon University • Rolls Wood Group Rolls-Royce PLC • RoRo Design Ltd • Royal Aeronautical Society • Royal Academy of Engineering • Royal Commission for the Exhibition of 1851 Royal Engineers • Ryanair • Sabic • Petrochemicals UK • Score Group PLC • Scot-Bots • Scottish Engineering • Scottish Engineering Hall of Fame • Scottish & Southern Energy • Scottish Power Selex ES • Sellafield Ltd • SEMTA • Senergy Development Solutions • Sgurr Energy • Shell UK • Siemens PLC • Siemens Wind Power • Skanska • Skills Development Scotland Skye and Localsh Countryside • Ranger • Slater Aerosystems Ltd • Smith Electric Vehicles • Society of Operations Engineers • Soil Machine Dynamics Ltd • Sone Products Ltd South Ayrshire Council • Spirit Aerosystems Ltd • SPX • Stainon Lighting Design Services Ltd • Star Refrigeration • STEMNET • Stephen Napper Associates Ltd • Stow College • Subsea 7 Suse • Swietelsky • Sygenta • TATA Steel • Taylor Ltd • Technip UK Ltd • Thales UK • Thales Water • The British Institute of Non-Destructive Testing • The Glass Academy • The JCB Academy The GM UTC • The Royal Institution of Naval Architects • The Sutcliffe Tool Co. Ltd • The University of Dundee • TMS CAD Centre • Tony Gee and Partner • TQC • Train'd Up • Transport Scotland TRW Automotive • TTE Training Limited • Tullow Oil • TUV NEL • Tynemetropolitan College • UCLAN • UK Astronomy Technology Centre • Unity Partnership • University of Glasgow University of Huddersfield • University of Manchester • University of Oxford • University of Strathclyde • University of the West of Scotland • UPM Caledonian • UTC Aerospace Systems Veka UK Group • Verco • VH Innovation Ltd • Vdsione Group • WJ & W Langs • Walker Filtration Ltd • Waters Corporation • Wattcraft Ltd • Weatherford Limited UK • Weir Group • Wellstream West Dunbartonshire Council • Williams F1 • Wood Group GTS • Wood Group Kerry • Woodgroup PSN • WSP Global Inc. • Zurich Risk Engineering UK



IMPROVING THE WORLD

THALES

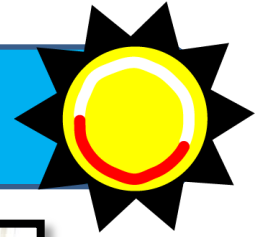
Did you know?

THALES



Primary Engineer Programmes

The first steps...



Susan Scurlock
Chief Executive and Founder
Susan.scurlock@primaryengineer.com

Head Office and Training Centre.
Floor 2 | AMS Office Tower, AMS Technology Park,
Billington Rd. Burnley Lancashire

Scottish Office:
Scottish Engineering | 105 West George Street
Glasgow G2 1QL
www.primaryengineer.com | www.leadersaward.com
www.iprimeng.com | www.iseceng.com



Scottish  Engineering

