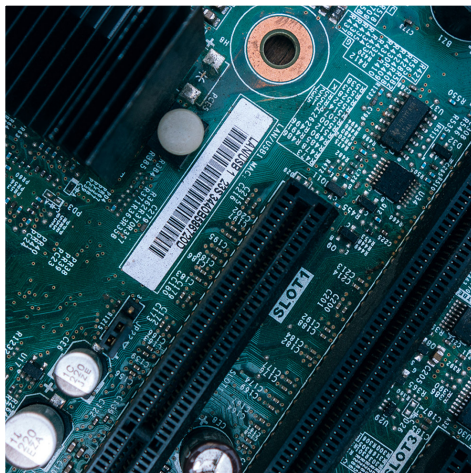


$$f_{\xi_1}(\xi_1) = \frac{(\xi_1 - a)}{\sigma^2} f_{a,\sigma^2}(\xi_1) = \frac{1}{\sqrt{2\pi\sigma}} \exp\left\{-\frac{(\xi_1 - a)^2}{2\sigma^2}\right\}$$
$$f(x, \theta) dx = M\left(T(\xi) \cdot \frac{\partial}{\partial \theta} \ln L(\xi, \theta)\right) \int_{R_x} \frac{\partial}{\partial \theta} \ln L(x, \theta) \cdot f(x, \theta) dx = \int_{R_x} T(x) \cdot \left(\frac{\partial}{\partial \theta} \ln L(x, \theta)\right) f(x, \theta) dx = \int_{R_x} T(x) f(x, \theta) dx = \int_{R_x} \frac{\partial}{\partial \theta} T(x) f(x, \theta) dx$$



**TEACHING MATERIALS
REGISTER**

Materials Title	Developed by	Units	Available
Engineering Mathematics	West College Scotland & Forth Valley College	Engineering Mathematics 1 (H7K0 33) <ul style="list-style-type: none"> • Outcome 1 - Functions • Outcome 2 - Logs and Exponentials • Outcome 3 - Vectors and Complex Numbers Engineering Mathematics 2 (H7K1 34) <ul style="list-style-type: none"> • Outcome 1 - Trig Functions • Outcome 2 - Differentiation • Outcome 3 - Integration Engineering Mathematics 3 (H7K2 34) <ul style="list-style-type: none"> • Outcome 1 - Differentiation • Outcome 2 - Integration Engineering Mathematics 4 (H7K3 35) <ul style="list-style-type: none"> • Outcome 1 - Complex Numbers Outcome 2 - Matrices • Outcome 3 - Taylor and MacLaurin • Outcome 4 - First Order Differential Equations Engineering Mathematics 5 (H7K4 35) <ul style="list-style-type: none"> • Outcome 1 – Second Order Linear Differential Equations • Outcome 2 – Partial Differentiation • Outcome 3 – Double Integration Techniques • Outcome 4 – Laplace Transforms • Outcome 5 – Eigenvalues and Eigenvectors 	ESP members
Quality Management An Introduction	Glasgow Clyde College	Quality Management: An Introduction (DT8Y 34) <ul style="list-style-type: none"> • Outcome 1 - Explain the fundamental principles of Quality Assurance and Quality Control • Outcome 2 - Explain the stages to be met in the process of achieving ISO 9001 • Outcome 3 - Select and apply quality improvement tools and techniques • Outcome 4 - Total Quality Costs 	ESP members
Certificate in Environmental Technology Systems	Dundee College	<ul style="list-style-type: none"> • Working Principles, Installation, Options and Regulatory Requirements for Micro Renewable Technologies, Water Harvesting and Recycling Technologies (F8XJ 04) • F8XJ 04 Working Principles Generic Assessment • Install, Test, Commission and Handover Solar Thermal Hot Water Systems (F8XK 04) Install, Test, Commission and Handover Solar Photovoltaic Systems (F8XL 04) • Install, Test, Commission and Handover Heat Pump Systems (F8XM 04) 	ESP members
Diploma in Electrical Power Engineering - Wind Turbine Maintenance (City & Guilds 2339- 44 Level 3)	Carnegie College	<ul style="list-style-type: none"> • Health & safety in the power industry (650) • Theory & background of wind turbines/energy (651) Mechanical theory & principles of wind turbine technology (652) Electrical theory & principles for wind turbine technology (653) • Control & instrumentation theory & principles of wind turbine technology(654) Hydraulic theory & principles of wind turbine technology (655) • Wind turbine systems technology (656) 	ESP – Limited access
Green Deal		<ul style="list-style-type: none"> • Certificate for Green Deal Assessors • Certificate for Domestic Energy Assessors 	ESP – Limited access via WeTransfer Updated 2014
Global Wind Organisation (GWO) - Basic Technical Training	Ayrshire College	<ul style="list-style-type: none"> • Modules • Electrical • Hydraulic • Mechanical 	ESP members
Wind and Marine Training Network Resources	Orkney College UHI (2014)	Support Notes For Personal Safety & Social Responsibilities	ESP – Limited access via WeTransfer
RTN Blade Repair & Inspection	RTN	Awareness Basic	ESP – Limited access via WeTransfer
HN Energy Units	Stow College (Units) North Highland College UHI (Materials)	Energy Overview (H4J5 34) <ul style="list-style-type: none"> • Outcome 1: Global Energy Trends • Outcome 2: National Factors Relating to Energy Production, Consumption, Greenhouse Gas Emissions and Energy Security • Outcome 3: Building and Transportation • Outcome 4: Industrial Sized Power Plants Energy Technologies (H4J6 35) <ul style="list-style-type: none"> • Outcome 1: Analyse the Technologies and Factors Associated with Traditional Methods of Energy Production. • Outcome 2: Analyse the Technologies and Factors Associated with Renewable Methods of Energy Production • Outcome 3: Describe the Technologies and Factors Associated with Emerging and/ or Less Common Methods of Energy Production 	ESP – Energy Technologies ESP members
Thermal Imaging	Edinburgh Napier University (2016)	Training in thermal analysis of buildings	ESP members
Sound insulation	Edinburgh Napier University (2016)	Sound insulation: design and construction for airborne and impact sound	ESP members

Waste Awareness for Construction Students	Fife College (2017)	<ul style="list-style-type: none"> Waste Awareness Learning Materials Booklet Waste Awareness Teaching Presentation 	ESP – Limited access via WeTransfer
HND Electrical Engineering	NESCol FVC West Lothian College, Dumfries & Galloway College	<ul style="list-style-type: none"> DG3G34\02 Electrical Networks and Resonance DN4E34\03 Digital Electronics DN4633\04 Analogue Electronics: An Introduction D75X34\36 Information Technology: Applications Software 1 DN4K35\04 Electrical Motor Drive Systems DN3T34\03 Electrical Systems in Potentially Explosive and Gas Hazardous Environments DN4935\04 Transformers DN4F35 Electrical Installation Design DN3Y34\09 Fundamentals of Control Systems and Transducers A6AX 34 Project Management: An Intro DG5735\03 Transmission Lines and Complex Waves DN3X35\03 Electrical Engineering: Graded Unit 2 (Double unit) DN4A35\03 Utilisation of Electrical Energy in Buildings DG3D35\07 Business Awareness and Continuing Professional Development DN4M35 Electrical Standby Systems 	ESP members
MOT Training Materials	Glasgow Clyde College (2017)	<ul style="list-style-type: none"> ESP DVSA NTTLV Presentation March 2017 Candidate check and details record MOT Student Handbook ESP Suggested Inspection Routine Not to be used in Practical Assessment VT8 MOT Practical Assessment Carrying out Brake Efficiency Calculations – Formula Required Practical Assessment covering the mandatory units 	ESP members
Certificate in Electrical Power Engineering - Distribution and Transmission (Level 2) (2339 – 17)	Forth Valley College (2015)	<ul style="list-style-type: none"> Unit 660 Understanding Legislation in Power Industry Unit 661 Electrical Theory Unit 661 Mechanical Theory Unit 662 Electrical Networks, Plant and Apparatus 	ESP – Limited access via WeTransfer
CITB Construction Online Units	CITB	<ul style="list-style-type: none"> Plumbing (DM7E 10) Half Brick Walling (DM7G10) Site Carpentry Bench (DM7J) Decorative Painting (DM7K 10) Roof Tiling (DM7N 10) Plasterwork (DM7R 10) Electrical Installation (DM7T 10) Practical Copper Pipework (DM7W 10) Finishes using Waterborne Paints (DM7Y 10) Brickwork Techniques (DM81 10) Carpentry and Joinery Techniques (DM82 10) Bench Joinery (DX0J 10) Bench Joinery (DX0J 11) One Brick Walling (DX0L 11) Plumbing of Sanitary (DX0T 11) Decorative Painting Techniques (DX0R 11) Energy Efficiency (HD 70 46) Stonemasonry (FF33 10) Principles of Energy Efficiency (HD71 46) The Importance of Energy Efficiency (HD6Y 45) 	ESP members Zipped SCORM Files for viewing online in Moodle
Online Hydrogen Awareness course	SGN, Orkney College UHI and Dundee and Angus College (2020)	<ul style="list-style-type: none"> Introduction to hydrogen types of hydrogen health & safety future careers options in the hydrogen industry 	Access HERE
Online Hydrogen for Transport course	Aberdeen City Council, H2 Aberdeen, H2 Accelerator, HyTrEc2 and SMART-HY-AWARE	<p>Key areas covered in this course include.</p> <ul style="list-style-type: none"> Hydrogen Refuelling Stations Road Transport Marine Transport Rail Transport Air Transport 	Access HERE
Offshore Wind Awareness tool	North East Scotland College and Dundee & Angus College (2020)	This online tool aims to give an overview of the installation, operation and associated work in relation to offshore wind farms.	Access HERE
NPA Maritime Studies	Shetland School of Nautical Studies and NAFC	The aim of the Unit is to provide knowledge about the maritime sector, its sub-sectors and main vessel types, its economic importance and career pathways.	ESP members
PDA Advanced Manufacturing	Forth Valley College, Dumfries & Galloway College	<p>Key areas covered in this course include.</p> <ul style="list-style-type: none"> CAD 3D Printing Internet of Things Advanced Manufacturing Technologies 	ESP members
PDA in Industrial Automation	Ayrshire College, Edinburgh College, Forth Valley College, North East Scotland College	<p>Key areas covered in this course include.</p> <ul style="list-style-type: none"> Application of PLCs Engineering Systems interfaced with PLCs Computer Programming 	ESP members

These ESP Teaching Materials are available for member colleges to use. If your college wishes to access these materials please contact ESP at info@esp-scotland.ac.uk



ESP

Argyll Court, Castle Business Park
Stirling, FK9 4TY

web: www.esp-scotland.ac.uk

email: info@esp-scotland.ac.uk



www.linkedin.com/in/espScotland

@ESPScotland



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