

Datblygiad Proffesiynol Parhaus **Cyrsiau Gogledd Cymru**

Mae Rhaglen Gymorth Mathemateg Bellach yn falch o allu cynnig y cyfleoedd Datblygu Proffesiynol canlynol yng Ngogledd Cymru



Mathemateg lefel A

Uned 2 – Ystadegaeth

Bydd y cwrs yn ymdrin ag Ystadegaeth yn y fanyleb newydd ar gyfer Mathemateg Safon Uwch ac mae wedi'i anelu at athrawon sydd heb addysgu ystadegaeth o'r blaen neu heb wneud ers amser.

Dyddiad: Bangor dyddiau Sadwrn Mawrth ac Ebrill. Wrecsam yn ystod yr wythnos mis Mehefin/Gorffennaf 2017 (gweler y daenlen atodedig ar gyfer dyddiadau)

Nifer o sesiynau: 4

Cost: am ddim i ysgolion a cholegau a ariennir gan y wladwriaeth. Mae cyllid athrawon cyflenwi ar gael

Lleoliad: Prifysgol Bangor a Glyndŵr

Uned 2 – Mecaneg

Bydd y cwrs yn cynnwys mecaneg yn y fanyleb newydd ar gyfer Mathemateg Safon Uwch ac mae wedi'i anelu at athrawon nad ydynt wedi addysgu Mecaneg o'r blaen neu heb wneud ers amser.

Dyddiad: Bangor Gwener a Sadwrn mis Mehefin a Gorffennaf. Wrecsam yn ystod yr wythnos Mehefin/Gorffennaf 2017 (gweler y daenlen atodedig ar gyfer dyddiadau)

Nifer o sesiynau: 4

Cost: am ddim i ysgolion a cholegau a ariennir gan y wladwriaeth. Mae cyllid athrawon cyflenwi ar gael

Lleoliad: Prifysgol Bangor a Glyndŵr

Mathemateg Bellach Lefel A

Mathemateg Bellach 3 (gorfodol) – Mecaneg

Mae'r y cwrs yn rhoi sylw cynhwysfawr i fanyleb newydd mecaneg ac wedi ei anelu at athrawon sydd ar hyn o bryd yn cyflwyno Mecaneg Mathemateg Lefel A a hoffai ddysgu Mecaneg Mathemateg Bellach.

Dyddiad: Dyddiau Sadwrn ym Mehefin a Gorffennaf (gweler y daenlen atodedig ar gyfer dyddiadau)

Nifer o sesiynau: 4

Cost: am ddim i ysgolion a cholegau a ariennir gan y wladwriaeth

Mae cyllid athrawon cyflenwi ar gael

Lleoliad: Prifysgol Bangor

Cyrsiau Undydd

Datrys Problemau Anarferol Mathemateg a STEP

Gall athrawon fynychu naill neu'r llall neu'r ddwy sesiwn.

Sut i addysgu Datrys Problemau – wedi ei dargedu at athrawon Cyfnod

Allweddol 4 a 5. Yn seiliedig ar <http://nrich.maths.org/10218> ac adnoddau NRICH cysylltiedig, bydd y gweithdy yn herio athrawon i feddwl am eu deialog mewnol eu hunain wrth ddatrys problemau a sut i ddatblygu deialog tebyg yn eu myfyrwyr.

Cwrs 2 awr - 10.00am – 12.00pm

Defnyddio'r Rhaglen Cymorth STEP - Bydd y gweithdy hwn yn canolbwyntio ar yr adnoddau ar ein gwefan <https://maths.org/step/> ac yn edrych ar sut y gall athrawon ddefnyddio'r adnoddau i gefnogi eu myfyrwyr. Bydd yn mynd i'r afael â hyder yr athro a'r myfyrwyr, gan gynnwys edrych ar Fecaneg ac Ystadegaeth.

Cwrs 2 awr- 1.00pm – 3.00pm

Dyddiad: **Dydd Sadwrn 18 Mawrth 2017**

Hyd: 4 awr

Cost: Am ddim

Lleoliad: Prifysgol Bangor



Technolegau Integredig

Bydd y cwrs yn delio gyda defnyddio cyfrifianellau graffigol ar gyfer darparu Mathemateg Bellach a Geogebra ar gyfer pynciau Mathemateg Bellach.

Dyddiad: **Dydd Sadwrn 8 Gorffennaf 2017**

Hyd 4 awr Cost: Am ddim

Lleoliad: Prifysgol Glyndŵr



Cynllunio ar gyfer y fanyleb Safon Uwch 2017 newydd - Gweithdy Pontio FP1 i FM Uned 1

Cwrs undydd er mwyn helpu adrannau i baratoi ar gyfer cyflwyno a gweithredu'r Uned 1 newydd lefel A mewn Mathemateg Bellach fydd yn effeithiol o fis Medi 2017

- Mae'r cwrs undydd yma'n ymdrin â'r trawsnewid o FP1 i Uned 1 Mathemateg Bellach
- Mae'r cwrs yn cynnwys cyflwyno pynciau newydd gyda ffocws penodol ar y gwaith factor newydd.
- Bydd y diwrnod yn rhoi cyfle i gael y wybodaeth ddiweddaraf, i fyfyrion ac i gynllunio gyda chefnogaeth cydweithwyr.
- Bydd yn darparu gwybodaeth am sut i ddod o hyd i'r adnoddau a'r cymorth gorau

Dyddiad: **Dydd Sadwrn 25 Mawrth 2017**

Hyd: 4 awr Cost: Am ddim

Lleoliad: Prifysgol Glyndŵr

Cynllunio ar gyfer y fanyleb Safon Uwch 2017 newydd – Gweithdy Pontio FP2 a 3 i FM Uned 4

Mae'r cwrs undydd yma'n ymdrin â'r trawsnewid o FP2 / 3 at y fanyleb newydd Mathemateg Pellach Uned 4

- Mae'r cwrs yn cynnwys cyflwyno pynciau newydd - Hafaliadau Differol.
- Mae'r cwrs yn cynnwys newidiadau i bynciau cyfredol - newidiadau i'r cwricwlwm, ee newidiadau i integreiddio, Cymwysiadau Calculus a Cyfres a Rhifau cymhlyg.
- Bydd y diwrnod yn rhoi cyfle i gael y wybodaeth ddiweddaraf, i fyfyrion ac i gynllunio gyda chefnogaeth cydweithwyr

Darparu gwybodaeth am sut i ddod o hyd i'r adnoddau a'r gefnogaeth orau gan gynnwys dangos technolegau perthnasol.

Dyddiad: **Dydd Sadwrn 1 Ebrill 2017**

Hyd: 4 awr Cost: Am ddim

Lleoliad: Prifysgol Glyndŵr

Hoffwn fynychu'r cwrs/cyrsiau Datblygiad Proffesiynol Parhaus canlynol yng
 Nghogledd Cymru
 I would like to attend the following FMSP Professional Development course(s)
 in North Wales.

<i>Cwrs/cyrsiau DPP hoffwn fynychu</i> <i>Professional Development Course(s) I would like to attend</i>			
<i>Lleoliad (de, gogledd neu ganolbarth Cymru)/ Location</i> <i>(South Wales, North Wales, Mid Wales)</i>			
<i>Enw / Name</i>			
<i>Enw'r ysgol/coleg / Name of school/college</i>			
<i>Ysgol gyfrwng Gymraeg, Saesneg neu ddwyieithog</i> <i>Welsh or English medium or bilingual school</i>			
<i>Pa fwrdd arholi mae eich ysgol yn dilyn i Safon Uwch</i> <i>Which exam board does your school follow at A-level</i>			
<i>Ebost / Email</i>			
<i>Cyfeiriad / Address</i>			
<i>Cod Post / Post code</i>			
<i>Ffôn / Telephone</i>			
<i>Arwyddwyd /Signed</i>		<i>Dyddiad /</i> <i>Date</i>	

Ffioedd: Cynigir cyrsiau yn rhad ac am ddim i athrawon mewn ysgolion a cholegau a ariennir gan y wladwriaeth.

Cais: I wneud cais, llenwch y tabl uchod a dychwelyd at Elen Wyn Clode.

Rhagor o wybodaeth: I gael rhagor o wybodaeth ac ymholiadau cyffredinol, e-bostiwch: e.w.clode@bangor.ac.uk

Continuous Professional Development

North Wales courses

Further Maths Support Programme are pleased to be able to offer the following Professional Development opportunities in North Wales



A Level Maths

Unit 2 – Statistics

Course will cover the statistics in the new specification for A Level Maths and is aimed at teachers who have not taught statistics before or not for a long time.

Dates: Bangor Saturdays in March and April. Wrexham weekdays

June/July 2017 (see attached spreadsheet for dates)

Number of sessions: 4

Cost: free for state funded schools and colleges

Supply cover funding available

Unit 2 – Mechanics

Course will cover the mechanics in the new specification for A Level Maths and is aimed at teachers who have not taught Mechanics before or not for a long time.

Dates: Bangor Fridays and Saturdays June & July 2017. Wrexham

Weekdays June/July 2017 (see attached spreadsheet for dates)

Number of sessions: 4

Cost: free for state funded schools and colleges

Supply cover funding available

A Level Further Maths

Further Maths 3 (compulsory) – Mechanics

The course will give a comprehensive coverage of the new specification of mechanics and is aimed at teachers who currently deliver A Level Maths Mechanics and would like to teach Further Maths Mechanics.

Dates: Saturdays in June and July (see attached spreadsheet for dates)

Number of sessions: 4

Cost: free for state funded schools and colleges

Supply cover funding is available

Location: Bangor University

One day courses

Solving Unusual Maths Problems and Sixth Term Examination Paper –

Teachers can attend either or both of the following session

How to teach Problem Solving - targeted at teachers of Key Stage 4 and 5.

Based on <http://nrich.maths.org/10218> and related NRICH resources, the workshop would challenge teachers to think about their own internal dialogue when solving problems and how to develop a similar dialogue in their students.

2 hour course - 10.00am – 12.00pm

Using the STEP Support Programme - this workshop would focus on the resources on our website <https://maths.org/step/> and look at how teachers can use the resources to support their students. It would tackle teacher and student confidence, including a look at Mechanics and Statistics.

2 hour course- 1.00pm – 3.00pm

Date: **Saturday 18 March 2017**

Duration: 4 hours

Cost: Free

Location: Bangor University



Integrated Technologies

The course will cover using graphical calculators for the delivery of Further Maths and applications of Geogebra for Further Maths topics.

Date: **Saturday 8th July 2017**

Duration 4 hours Cost: Free

Location: Glyndŵr University



Planning for the 2017 new A level specification – Transition workshop - **FP1 to FM Unit 1**

A one day course to help departments prepare for the introduction and implementation of the new Unit 1 A level in Further Mathematics effective from September 2017.

- The one day course covers the transition from FP1 to Further Maths Unit 1
- Course covers the introduction of new topics with a particular focus on the new vector work.
- The day will have opportunities to gain up to date information, to reflect and to plan with the support of colleagues.
- To provide information about finding the best resources and support

Date: **Saturday 25th March 2017**

Duration 4 hours Cost: Free

Location: Glyndŵr University

Planning for the 2017 new A level specification- Transition workshop – FP2&3 to FM Unit 4

The one day course covers the transition from FP2/3 to the new specification for Further Maths Unit 4.

- Course covers the introduction of new topics – Differential Equations.
- Course covers changes to current topics - curriculum changes, eg changes to integration, Applications of Calculus and Power Series and Complex Numbers.
- The day will have opportunities to gain up to date information, to reflect and to plan with the support of colleagues.
- To provide information about finding the best resources and support including demonstration of relevant technologies.

Date: **Saturday 1 April 2017**

Duration 4 hours Cost: Free

Location: Glyndŵr University



Unit 2	Maths	Mechanics	Bangor	Friday 30th June	Bilingual
			Bangor	Saturday 1st July	Bilingual
			Bangor	Friday 7th July	Bilingual
			Bangor	Saturday 8th July	Bilingual
Unit 2	Maths	Statistics	Bangor	Saturday 18th March	Bilingual
			Bangor	Saturday 1st April	Bilingual
			Bangor	Saturday 22nd April	Bilingual
			Bangor	Saturday 29th April	Bilingual
FM3	Further Maths	Further Maths Mechanics	Bangor	Saturday 24th June	Bilingual
			Bangor	Saturday 1st July	Bilingual
			Bangor	Saturday 8th July	Bilingual
			Bangor	Saturday 15th July	Bilingual
SUMP and STEP			Bangor	Saturday 18th March	English

Unit 2	Maths	Mechanics	Wrexham - Glyndwr Uni	Thursday 29th June	English
			Wrexham - Glyndwr Uni	Monday 5th July	English
			Wrexham - Glyndwr Uni	Friday 14th July	English
			Wrexham - Glyndwr Uni	Wednesday 19th July	English
Unit 2	Maths	Statistics	Wrexham - Glyndwr Uni	Friday 30th June	English
			Wrexham - Glyndwr Uni	Thursday 6th July	English
			Wrexham - Glyndwr Uni	Wednesday 12th July	English
			Wrexham - Glyndwr Uni	Tuesday 18th July	English

FP1 - FM1	Further Maths	Pure - Transition workshop	Wrexham - Glyndwr Uni	Saturday 25th March	English
FP2/3 - FM4	Further Maths	Pure - Transition	Wrexham - Glyndwr Uni	Saturday 1st April	English
FM1	Further Maths	Further Maths 1	Wrexham - Glyndwr Uni	Oct 17 - Feb 18	English
Integrated technologies		Geogebra and Calculators	Wrexham - Glyndwr Uni	Saturday 8 July	English

I would like to attend the following FMSP Professional Development course(s) in South Wales.

Hoffwn fynychu'r cwrs/cyrsiau Datblygiad Proffesiynol Parhaus canlynol yn Ne Cymru

<i>Professional Development Course(s) I would like to attend / DPP hoffwn fynychu</i>			
<i>Location (South Wales, North Wales, Mid Wales)</i>			
<i>Name / Enw</i>			
<i>Name of school/college / Enw'r ysgol/ coleg</i>			
<i>Welsh or English medium school / Ysgol gyfrwng Gymraeg neu Saesneg</i>			
<i>Which exam board does your school follow at A-level / Pa fwrdd arholi mae eich ysgol yn dilyn i Safon Uwch</i>			
<i>Email / Ebst</i>			
<i>Address / Cyfeiriad</i>			
<i>Post code / Cod Post</i>			
<i>Telephone / Ffôn</i>			
<i>Signed / Arwyddwyd:</i>		<i>Date / Dyddiad:</i>	

Fees: Courses are offered free of charge to teachers in state-funded schools and colleges.

Application: To apply please complete the above table and return to Elen Wyn Clode.

Further information: For more information and general enquiries please email: e.w.clode@bangor.ac.uk

