**Competition Brief**

**Competition Title**

Industrial Electronics

**Competition Overview**

Industrial Electronics technicians and engineers operate specialist equipment in various workplaces ranging from aerospace and the armed forces to the entertainment industry, health and education. They must maintain their skills and knowledge to keep up with the latest developments in technology and be able to follow detailed specifications.

In this competition, competitors will undertake the role of an electronics technician and will be required to work to industry recognised standards. They will be expected to follow a set of pre-competition instructions and download the software so they are familiar with the dedicated printed circuit design software which is used in the competition.

Live competition heats will be held at various venues across Wales

**Entry Criteria**

The competition is for those training for a career in the Industrial Electronics industry and studying towards a Level 3 qualification or an apprenticeship. Please ensure that your entrants have the skills and competences to complete the task.

**Entry capacity restrictions by organisation**

Maximum of up to **9 per location**. **Reserves** may also be registered to account for potential absences or withdrawals.

This is the maximum number of entries permitted by an organisation for this competition.

This is determined by ‘location’ and ‘organisation’. ‘Organisation’ refers to the competitors’ training provider/employer. ‘Location’ refers to a site where the competitor studies / is employed.

This competition may be subject to a selection process if competitor registration numbers exceed the host venue capacity. Where capacity is identified in a competition the reserve competitors may be invited to compete.

The decision will be made following a consultation between Skills Competition Wales and the competition lead after registration closes. All parties will be notified of any changes.

For further guidance on these capacities, [click here.](https://inspiringskills.gov.wales/competitions/competition-registration-guide)

**Brief**

The competition will consist of 4 tasks:

Task A: Construction of an electronic project.

Task B: Theory at level 3 EAL/ BTEC.

Task C: Embedded systems (Coding and Autodesk Fusion)

Task D: Fault Finding on pre-faulted electronic boards

Previous competition briefs are available to view and download via the Skills Competition Wales website, please [click here](https://inspiringskills.gov.wales/competitions/industrial-electronics/archives) to access.

**Infrastructure List**

Resources, equipment available at the venue per competitor -

Soldering Irons, desoldering equipment, fume extraction, safety goggles, oscilloscope, multi-meter, frequency generator, PC with Autodesk Fusion, Printer, electronic hand tools, Logic probe, anti-static precaution equipment.

**Competition Rules**

For full terms and conditions of entry and competition rules [visit](https://inspiringskills.gov.wales/terms/registrations-terms-and-conditions).

**Competition specific rules**

* Task B is under examination rules.
* All appropriate health and safety regulations to be adhered to.

**Generic competition rules**

* Mobile phones are to be switched off during competition activity.
* Listening to music via headphones is not permitted during competition activity.
* Any questions during competition activity should be addressed to the competition judging panel.
* Competitors should not communicate with other competitors during competition activity.
* It is the responsibility of each competitor to arrive on time for each competition session. No additional time will be allowed if you arrive late.
* Technical failure of your equipment should be reported immediately to the judging panel. Additional time will be allocated if the fault is beyond the control of the competitor.

**Marking and Assessment**

Marking and judging of this competition will be done by a team of experts from Industry, Further Education or Training Provider, using a marking criteria and allocated marks to ensure consistency.

**Brief breakdown of marking and assessment:**

| **Test** | **Marking criteria** | **Percentage** |
| --- | --- | --- |
| A | Construction of an electronic project  | 25% |
| B | Theory at level 3 EAL/ BTEC | 25% |
| C | Hardware Design/ Embedded system: This incorporates a design of a circuit element that will interact with another device. It is possible to have an Arduino element that will interface with the project. Use of Autodesk Fusion will be expected. | 25% |
| D | Fault Finding on pre faulted electronic boards | 25% |
|  | Total | 100% |

**Feedback and Recognition**

Individual and Group verbal feedback will be provided at the end of the competition. No results or awards will be awarded on the day as marking will be quality assured.

All competitors will be issued with a Participation Certificate on the competition day. First, second, third and highly commended awards will be announced during the celebration event. The highly commended award recognises all competitors who have achieved above average. The celebration event will be held on Wednesday 18th March 2026, further details will be communicated to competitors and their points of contact by email.

Marksheets will be available upon request via info@skillscompetitionwales.ac.uk to competitors after the celebration event

**Competition Lead**

**Lead Contact:**

Steve Williams- Gower College Swansea

steve.williams@gcs.ac.uk

**Expert Contacts:**

Steve Williams - Gower College Swansea

Gerard Morgan - Gower College Swansea

**Our partners**

This competition is delivered in partnership with



**Briff y Gystadleuaeth**

**Enw’r Gystadleuaeth**

Electroneg Ddiwydiannol

**Trosolwg o’r Gystadleuaeth**

Mae technegwyr a pheirianwyr Electroneg Ddiwydiannol yn gweithredu offer arbenigol mewn meysydd amrywiol sy’n cynnwys awyrofod, y lluoedd arfog, y diwydiant adloniant, iechyd, ac addysg. Rhaid iddyn nhw fireinio eu sgiliau a'u gwybodaeth yn barhaus er mwyn dilyn y datblygiadau diweddaraf mewn technoleg, yn ogystal â gallu dilyn manylebau manwl.

Yn y gystadleuaeth hon, bydd y cystadleuwyr yn gwneud gwaith technegydd electroneg a bydd gofyn iddynt weithio i’r safonau a gydnabyddir gan y diwydiant. Bydd disgwyl iddyn nhw ddilyn set o gyfarwyddiadau cyn y gystadleuaeth, gan lawrlwytho a dod yn gyfarwydd â’r meddalwedd cylched printiedig pwrpasol a ddefnyddir yn y gystadleuaeth.

Cynhelir rowndiau rhagbrofol byw mewn sawl lleoliad ledled Cymru.

**Gofynion Mynediad**

Mae'r gystadleuaeth hon ar gyfer y rhai sy'n hyfforddi ar gyfer gyrfa mewn Electroneg Ddiwydiannol ac sy’n astudio tuag at gymhwyster Lefel 3 neu Brentisiaeth.

Sicrhewch fod gan eich ymgeiswyr y sgiliau a'r gallu angenrheidiol i gwblhau'r dasg.

**Cyfyngiadau capasiti mynediad yn ôl sefydliad**

Uchafswm o **9 cystadleuydd** ar bob lleoliad. Gellir cofrestru **cronfeydd wrth gefn** hefyd i gyfrifon absenoldeb neu dynnu'n ôl os bydd angen

Efallai y bydd ceisiadau yn cael eu lleihau er mwyn cyd-fynd â chapasiti'r lleoliad ond bydd hyn yn cael ei rannu'n deg ar draws y darparwyr. Penderfynir ar hyn yn ôl 'lleoliad' a 'sefydliad'. Mae 'sefydliad' yn cyfeirio at gyflogwr/darparwr hyfforddiant y cystadleuwyr. Mae 'lleoliad' yn cyfeirio at y safle lle mae'r cystadleuydd yn astudio/cael eu cyflogi.

Gall y gystadleuaeth hon fod yn destun proses ddethol os yw'r niferoedd cofrestru cystadleuwyr yn fwy na chapasiti'r lleoliad cynnal. Lle nodir bod capasiti ar gyfer y gystadleuaeth, gellir gwahodd cystadleuwyr wrth gefn i gystadlu.

Bydd y penderfyniad yn cael ei wneud yn dilyn ymgynghoriad rhwng Cystadleuaeth Sgiliau Cymru ac arweinydd y gystadleuaeth ar ôl i'r cofrestru gau. Bydd pob parti yn cael gwybod am unrhyw newidiadau.

Am ragor o wybodaeth am y cyfyngiadau hyn, [cliciwch yma](https://inspiringskills.gov.wales/competitions/competition-registration-guide).

**Brîff**

Bydd y gystadleuaeth yn cynnwys 4 tasg:

Tasg A: Adeiladu prosiect electronig

Tasg B: Theori Lefel 3 EAL/BTEC.

Tasg C: Systemau Mewnosodedig (codio ac Autodesk Fusion)

Tasg D: Canfod diffygion ar fyrddau electronig sydd â nam

Mae briffiau cystadleuaeth flaenorol ar gael i'w gweld a'u llwytho o’r wefan Cystadleuaeth Sgiliau Cymru, [cliciwch yma](https://inspiringskills.gov.wales/competitions/industrial-electronics/archives) i gael mynediad iddynt.

**Rhestr Seilwaith**

Adnoddau, bydd yr offer canlynol ar gael i bob cystadleuydd yn unigol yn y lleoliad -

Haearn sodro, offer dadsodro, echdynnydd mygdarth, gogls diogelwch, osgilosgop, amlfesurydd, generadur amledd, cyfrifiadur gyda meddalwedd *Autodesk Fusion*, argraffydd, offer llaw electronig, archwilydd rhesymeg (*logic probe*), offer rhagofal gwrthstatig (*anti-static* *precaution equipment*).

**Rheolau’r Gystadleuaeth**

I weld y telerau ac amodau mynediad a’r rheolau cystadlu yn eu cyfanrwydd [ewch i](https://inspiringskills.gov.wales/terms/registrations-terms-and-conditions?lang=cy).

**Rheolau sy'n benodol i’r gystadleuaeth**

* Cynhelir Tasg B dan reolau arholiad.
* Rhaid cydymffurfio â'r holl reoliadau iechyd a diogelwch priodol.

**Rheolau Cystadlu Cyffredinol**

* Rhaid diffodd ffonau symudol yn ystod y gweithgareddau cystadlu.
* Ni chaniateir gwrando ar gerddoriaeth gyda chlustffonau yn ystod y gweithgareddau cystadlu.
* Os bydd unrhyw gwestiynau yn ystod y gweithgareddau cystadlu, dylid eu cyfeirio at banel beirniaid y gystadleuaeth.
* Ni ddylai cystadleuwyr gyfathrebu â chystadleuwyr eraill yn ystod gweithgareddau cystadlu.
* Cyfrifoldeb pob cystadleuydd yw cyrraedd yn brydlon ar gyfer pob sesiwn o'r gystadleuaeth. Ni chaniateir amser ychwanegol os byddwch yn cyrraedd yn hwyr.
* Os bydd methiant technegol ar eich offer dylech hysbysu’r panel beirniadu ar unwaith. Bydd amser ychwanegol yn cael ei ganiatáu os yw'r nam y tu hwnt i reolaeth y cystadleuydd.

**Marcio ac Asesu**

Caiff y gwaith o farcio a beirniadu'r gystadleuaeth ei gynnal gan dîm o arbenigwyr o Ddarparwyr Hyfforddiant, Addysg Bellach, neu Ddiwydiant gan ddefnyddio meini prawf marcio a marciau wedi'u dyrannu i sicrhau cysondeb.

**Dadansoddiad byr o’r marcio a’r asesu:**

| **Prawf** | **Meini prawf marcio** | **Canran** |
| --- | --- | --- |
| A | Adeiladu prosiect electronig | 25% |
| B | Theori ar Lefel 3 EAL/BTEC | 25% |
| C | Dylunio Caledwedd / System Fewnosodedig: Mae hyn yn cynnwys dyluniad elfen cylched a fydd yn rhyngweithio â dyfais arall. Mae'n bosibl cael elfen Arduino a fydd yn rhyngweithio â'r prosiect. Disgwylir i’r cystadleuwyr ddefnyddio Autodesk Fusion | 25%  |
| D | Canfod diffygion ar fyrddau electronig sydd â nam | 25% |
|   | Cyfanswm | 100% |

**Adborth a Chydnabyddiaeth**

Bydd adborth llafar Unigol a Grŵp yn cael ei ddarparu ar ddiwedd y gystadleuaeth. Ni roddir canlyniadau na gwobrau ar y diwrnod gan y bydd angen sicrhau ansawdd y marcio.

Bydd pob cystadleuydd yn cael Tystysgrif Cyfranogi ar ddiwrnod y gystadleuaeth. Bydd gwobrau cyntaf, ail, trydydd a chanmoliaeth uchel yn cael eu cyhoeddi yn ystod y digwyddiad dathlu. Mae'r wobr canmoliaeth uchel yn cydnabod yr holl gystadleuwyr sydd wedi cyflawni sgôr uwch na'r cyfartaledd. Cynhelir y digwyddiad dathlu ar Dydd Mercher 18 Mawrth 2026, bydd manylion pellach yn cael eu rhoi i gystadleuwyr a'u pwyntiau cyswllt trwy e-bost.

Bydd taflenni marciau ar gael ar gais drwy info@skillscompetitionwales.ac.uk i gystadleuwyr ar ôl y digwyddiad dathlu.

**Arweinydd Cystadleuaeth**

**Prif Gyswllt:**

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**Cyswllt Arbenigol**

Steve Williams - Gower College Swansea

Gerard Morgan - Gower College Swansea

**Ein partneriaid**

Mae'r gystadleuaeth hon yn cael ei chyflwyno mewn partneriaeth â