Competition Brief

Competition title
Industrial Electronics
Competition overview
Stage One: Applicant registrations completed by 20/10/19 **Stage two**: Internal qualifying/ selection process with partner institutions. Sample work to be forwarded to partner institutions. **Stage Three:** Competitors selected from each institution maximum of 4 per institution. This depends on the confirmed take up from partner institutions. **Stage Four**: Pre competition training event to be organised between institution partners. **Stage Five:** Welsh Industrial Electronics Competition held at Gower College Swansea 16/01/2020. Welsh Industrial Electronics (Advanced) Competition held at Coleg Cambria – Deeside 23/01/2020. **Summary / outline of the competition content.** To include detail on core competencies The all Wales Finals will have four tasks: Task A: Construction of an Oscilloscope that runs via a laptop computer. Task B: Theory at level 3 EAL/ BTEC. Task C: Design Test and measurement (Including pre competition work using Eagle Autodesk) Task D: Fault Finding on pre faulted electronic boards.
Entry criteria
Students should be currently at level 2 studying towards level three.
Number by location/organisation
Capacity for the competition as a whole 32 (16 per location) Maximum number of entries by organisation 4
Brief
Specific competition content and activities on the day to be outlined. The competition will include: Task A: Construction of an Oscilloscope that runs via a laptop computer. Task B: Theory at level 3 EAL/ BTEC. Task C: Design Test and measurement (Including pre competition work using Eagle Autodesk) Task D: Fault Finding on pre faulted electronic boards

Infrastructure List

Resources, equipment available at the venue: Per Competitor

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

Competition rules

Competition specific rules

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

Generic competition rules

- Mobile phones 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

Brief breakdown of marking and assessment.

All marks are objective and will be awarded by the judges as follows:

Test	Marking criteria	Percentage	
A	Construction of an Oscilloscope that runs via a laptop computer.	25%	
B	Theory at level 3 EAL/ BTEC.	25%	
C	Design Test and measurement (Including pre competition work using Eagle Autodesk)	25%	10% for the pre competition work.
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. (Written feedback will not be provided)

No results or awards will be awarded on the day as marking will be quality assured.

Certificates of Participation will be issued on the day.

Medallists will be invited to a Celebration Event which will be held on 19th March 2020 at Sophia Hall, Sophia Gardens, Cardiff CF11 9XR from 12pm to 5 pm, where the First, Second and Third Awards will be presented.

https://www.sophiagardens.wales/venue/the-sophia-hall.html

Competition Lead

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Teitl y gystadleuaeth
Electroneg Ddiwydiannol

Trosolwg o'r gystadleuaeth
Cam Un: Cofrestriadau ymgeiswyr wedi'u cwblhau erbyn 20/10/19.   **Cam dau**: Proses gymhwyso a dethol yn fewnol gyda sefydliadau partner. Gwaith enghreifftiol i'w anfon ymlaen at sefydliadau partner.   **Cam Tri:** Dewis cystadleuwyr o bob sefydliad gydag uchafswm o 4 fesul sefydliad. Mae hyn yn dibynnu ar y nifer a gadarnhawyd gan sefydliadau partner.   **Cam Pedwar**: Digwyddiad hyfforddi cyn cystadlu i'w drefnu rhwng partneriaid y sefydliad.   **Cam Pump:** Cystadleuaeth Electroneg Ddiwydiannol Cymru (Uwch) i'w gynnal yng Ngholeg Gŵyr, Abertawe 16/01/2020.   Cystadleuaeth Electroneg Ddiwydiannol Cymru (Uwch) i'w gynnal yng Ngholeg Cambria, Glannau Dyfrdwy 23/01/2020.   **Crynodeb / amlinelliad o gynnwys y gystadleuaeth**   I gynnwys manylion am gymwyseddau craidd,   bydd pedair tasg i Rownd Derfynol Cymru gyfan: Tasg A: Adeiladu Osgilosgop sy'n gweithio trwy liniadur.   Tasg B: Theori ar lefel 3 Saesneg fel Iaith Ychwanegol (EAL) / BTEC.   Tasg C: Prawf Dylunio a mesur (yn cynnwys gwaith cyn y gystadleuaeth gan ddefnyddio Eagle Autodesk).   Tasg D: Dod o hyd i unrhyw feiau (*faults*) ar fyrddau electronig sydd â beiau arnyn nhw.

Meini prawf cystadlu
Dylai myfyrwyr fod ar lefel 2 ar hyn o bryd, ac yn astudio tuag at lefel 3.

Nifer fesul lleoliad/sefydliad
Capasiti ar gyfer y gystadleuaeth gyfan - 32 (16 ar gyfer pob lleoliad)   Uchafswm y cofrestriadau yn ôl sefydliad - 4

Briff
Cynnwys a gweithgareddau cystadlu penodol ar y diwrnod i'w amlinellu. Bydd   y gystadleuaeth yn cynnwys:

Tasg A: Adeiladu Osgilosgop sy'n gweithio trwy liniadur.

Tasg B: Theori ar lefel 3 Saesneg fel Iaith Ychwanegol (EAL) / BTEC.

Tasg C: Prawf Dylunio a mesur (yn cynnwys gwaith cyn y gystadleuaeth gan ddefnyddio
Eagle Autodesk).

Tasg D: Dod o hyd i unrhyw feiau (*faults*) ar fyrddau electronig sydd â beiau arnyn nhw.

Rhestr Seilwaith

Adnoddau, offer sydd ar gael yn y lleoliad: Ar gyfer pob Cystadleuydd:

Haearnau Sodro, Offer dad-sodro, offer cael gwared â mygdarthau (fumes), gogls diogelwch,
osgilosgop, amlfesurydd, generadur amledd, PC gydag Autodesk Eagle, argraffydd, offer llaw
electroneg, profiedydd rhesymeg (logic probe), offer rhagofal gwrth-statig (anti-static precaution
equipment).

Rheolau'r gystadleuaeth

Rheolau cystadleuaeth benodol

- Cynhelir Tasg B dan reolau arholiad.
- Rhaid cadw at yr holl reoliadau iechyd a diogelwch priodol.

Rheolau cystadleuaeth generig

- Rhaid diffodd ffonau symudol yn ystod y gystadleuaeth.
- Ni chaniateir gwrando ar gerddoriaeth trwy glustffonau yn ystod y gystadleuaeth.
- Dylid cyfeirio unrhyw gwestiynau yn ystod gweithgaredd cystadlu at banel beirniaid y gystadleuaeth.
- Ni ddylai cystadleuwyr gyfathrebu â chystadleuwyr eraill yn ystod y gystadleuaeth.
- Cyfrifoldeb pob cystadleuydd yw cyrraedd mewn pryd ar gyfer pob sesiwn gystadlu. Ni chaniateir unrhyw amser ychwanegol os byddwch chi'n cyrraedd yn hwyr.
- Os bydd rhyw broblem dechnegol ar eich offer, dylid rhoi gwybod i'r panel beirniaid yn syth. Rhoddir amser ychwanegol os yw'r bai neu'r nam y tu hwnt i reolaeth y cystadleuydd.

Marcio ac asesu

Dadansoddiad o'r marcio a'r asesu.

Mae'r marciau i gyd yn wrthrychol. Bydd y marciau yn cael eu dyfarnu fel a ganlyn:

A	Adeiladu Oscilosgop sy'n gweithio trwy liniadur.	25%	
B	Theori ar lefel 3 Saesneg fel Iaith Ychwanegol (EAL) / BTEC.	25%	
C	Prawf Dylunio a mesur (yn cynnwys gwaith cyn y gystadleuaeth gan ddefnyddio Eagle Autodesk).	25%	10% ar gyfer y gwaith cyn cystadlu.
D	Dod o hyd i unrhyw feiau (*faults*) ar fyrddau electronig sydd â beiau arnyn nhw.	25%	
Cyfanswm		**100%**	

Adborth a chydnabyddiaeth

Darperir adborth llafar i unigolion a grwpiau ar ddiwedd y gystadleuaeth. (Ni ddarperir adborth ysgrifenedig)

Ni ddyfernir unrhyw ganlyniadau na dyfarniadau ar y diwrnod gan y bydd angen sicrhau ansawdd y marcio. Cyhoeddir Tystysgrifau Cyfranogi ar y diwrnod.

Gwahoddir enillwyr y medalau i Ddigwyddiad Dathlu a gynhelir ar 19 Mawrth 2020 yn Neuadd Sophia, Gerddi Sophia, Caerdydd CF11 9XR rhwng 12pm a 5pm, lle bydd y Wobr Gyntaf, yr Ail a'r Drydedd Wobr yn cael eu cyflwyno.https://www.sophiagardens.wales/venue/the-sophia-hall.html

Arweinwyr y Gystadleuaeth

Prif Gyswllt

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