

BTEC Nationals

IVA – CENTRE GUIDANCE

Edexcel Level 3 BTEC National Certificate/Diploma

Operations & Maintenance Engineering
Operations & Maintenance Engineering (Electrical)
Operations & Maintenance Engineering (Electronic)
Operations & Maintenance Engineering (Mechanical)
Operations & Maintenance Engineering (Process)

Unit 2: Communications for Technicians

Unit 5: Project - Operations and Maintenance Engineering

Issued June 2004

For use during the remainder of the duration of operation
of the specification issued June 2002 and amendments
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DEFINITIONS AND KEY TERMS

The Integrated Vocational Assignment (IVA) is an assessment provided by Edexcel that covers the whole of either one or two units as set out in the unit specification for the programme. It provides a standard set of tasks ensuring that all learners nationally are being benchmarked identically, thus exemplifying the standards required throughout all the remaining units pertaining to a qualification.

The IVA is assessed by centres using the published unit assessment criteria. The centre assessment of the unit(s) is reported to Edexcel using points that are used to award unit grade(s) and the overall qualification grade.

Centre assessment is sampled by an external verifier (EV) appointed by Edexcel and the EV either confirms that assessment has been carried out to national standards or requires remedial action by the centre prior to final points scores being reported.

IVAs may be taken at any time during the learner's programme when it is appropriate. Sampling by the EV may take place at any time agreed with the EV, provided that a full sample of completed and fully assessed IVAs is available. Centres must make arrangements as far in advance of the deadline dates as possible in order to ensure that the EV can make time available.

KEY DATES

1 November	Closing date for registering learners on BTEC programmes (Firsts and Nationals).
	Where a programme begins at any other time of the year learners must be registered within 4 weeks of starting the programme.
1 January	External sampling window for EV commences.
31 May	Final deadline for EV to report on IVA sampling.
30 June	Final deadline for points scores to be submitted to BTEC Registrations and Certification Services for summer certification.

** Centres that fail to meet the deadlines for learner registration, or IVA sampling or for submission of IVA points scores to Edexcel, may delay the issue of certification for learners completing at the end of the summer term.

If a programme is running within a non-standard delivery period, centres may not need to comply with the specific timings above. Centres should refer to the Information Manual and may contact the BTEC Assessment Team by email at: btecassess@edexcel.org.uk for further guidance.

GUIDANCE FOR SUPPORTING LEARNERS, ASSESSING IVAs AND REPORTING ACHIEVEMENT

Requirements

Edexcel requires that centres comply with the following, that:

- each learner has been taught the content of the unit(s) to which the IVA relates.
- each learner has their own copy of the IVA Learner Instructions with a completed Centre IVA Issue Sheet, giving information on key dates, resources, support, etc. Centres may use the sheet provided in Appendix 1 or use their own.
- contact is maintained with the learner during the IVA period so that assessors are able to sign the declaration that learner's work is genuinely their own on the IVA Coversheet. Centres must use the form provided in Appendix 2.
- it is not acceptable to provide model answers, to accept work from a group as that of each individual within the group, or to mass-produce information in any form that is then presented by learners as their own evidence for an IVA task.
- all learner work is assessed and internally standardised
- appropriate arrangements are made by the centre for sampling of learner work by the EV and for undertaking any remedial action required.
- points scores are reported for all learners by the stipulated deadline.

Delivery period

The organisation of the IVA period is left to the centre's discretion. The IVA may be taken at any time during the delivery of the programme. If an IVA covers two units then work may be produced for some tasks and then subsequently for the remainder, but the two units will be sampled by the EV together.

The centre should set its own internal deadlines for both formative and summative review of learner work and should ensure that this is consistent with arrangements for EV sampling. For example, a centre may require several weeks to assess, check and record learner work before it can be supplied to an EV.

Registrations and transfers

All learners must be registered with Edexcel on the correct programme before taking the IVA.

Where learners have transferred between programmes, centres must ensure they have completed the correct IVA. If a learner is to transfer having completed the IVA, then generally IVA outcomes should be reported first.

Learners who transfer from a National Award with a one-unit IVA to a related National Certificate/National Diploma will not be credited with the unit covered in the award. However, the learner may make use of evidence originally presented for the IVA when submitting for the two-unit IVA.

Introducing the IVA to the learners

As part of the set-up phase:

- centres should provide learners with copies of the IVA Learner Instructions and the Centre IVA Issue Sheet.
- centre staff may wish to structure the use of available resources or to plan for the delivery of practical activities.

Review and support

Centre staff may give support and guidance to their learners as they would during the conduct of any internally set assignment. This may include commenting on draft work by learners so that the final work presented is as complete as possible. Centres may wish to set a formal date for draft work to be submitted for review or to have other formalised review activities.

The focus of review and support should be to check that learners understand what is expected of them and complete all tasks fully.

Use of Observation Records and Witness Statements

Observation Records should be used to provide a formal record of an assessor's judgement of learner performance when required. The assessor must complete the Observation Record, sign and date it before submission as part of the IVA evidence.

A Witness Statement should be used to provide a record of learner performance against criteria, when required. Assessors must actively take steps to ensure that any Witness Statement submitted, as part of the IVA evidence is authentic.

Assessing the IVA

Centres may use any number of assessors for the IVAs. The centre must internally standardise, through assessing an initial sample, prior to final assessment of all learner work. Please refer to the `Handbook for NQF BTEC Qualifications Levels 1 - 3' for information on the conduct of standardisation. It is the centre's responsibility to standardise across sites where there are different cohorts on a number of sites.

When assessing a learner's work, the script should be annotated to show where criteria have been achieved or have not been achieved. It is advisable to provide detailed feedback to learners separately. If learners resubmit work or provide additional work after formative assessment, this may require further annotation.

Prior to the centre's deadline for final assessment, assessors should provide formative assessment and feedback to learners. This should show which criteria have been achieved and which are still to be achieved. The centre should stipulate what further evidence would be considered. It is important that centre standardisation takes place during this process to ensure that the feedback given to learners is valid. Evidence of standardisation must be supplied to the EV.

Summative assessment takes place once the centre's final deadline is reached. The centre should complete the Grade/Points Recording Sheet(s) for each learner, ticking appropriate assessment criteria achieved and calculating the points awarded in the total boxes.

Sampling the IVA

The centre must make a sample of work available to the EV that is completed, assessed according to the centre's standardised interpretation of the criteria, and submitted with the Grade/Points Reporting Sheet(s) for each learner and the overall record of standardisation.

The sample must be of learners with a range of points scores. Full details of sample size and sample selection will be provided. The EV may request further samples if necessary. The EV will give either a Yes or a No to certification on the basis of the sample.

Centres will be required to take remedial action and submit a further sample where a No is given. Certification will be delayed until remedial action has been effected.

Reporting achievement

Once the EV has assessed a sample and agreed that the IVA has been delivered to national standards, the centre may submit points scores to Edexcel. The total points should be transferred to the overprinted centre points sheets for submission to Edexcel. This should be not later than 30 June for August certification.

FREQUENTLY ASKED QUESTIONS

Q	<i>How much can assessors help learners?</i>
A	Assessors should guide learners in the same way and to the same extent as if the IVA were an assessment that had been internally set. The work provided by the learners should be their own and should accurately demonstrate their level of achievement.
Q	<i>What if I am not sure about the meaning of some of the assessment criteria?</i>
A	The terminology used in assessment criteria is generally explained in the detailed content of the unit. Where terms such as "analyse" or "evaluate" are used, then the specific context may be given in the IVA.
Q	<i>Can I modify a task to make it more appropriate for my learners?</i>
A	The tasks set must not be changed.
Q	<i>Can a centre make braille and/or large print copies of the IVA?</i>
A	Yes. For learners with special requirements, centres may provide the IVA to learners in an amended format, such as in Braille or in large print. Centres should refer to the guidance document on 'Special Requirements for Learners on BTEC Programmes'.
Q	<i>Can IVA point scores be submitted to Edexcel after 30 June ?</i>
A	Certification in August cannot be guaranteed if point scores are received after the deadline. If centres are offering programmes over non-standard periods, they may submit points scores at the agreed time.
Q	<i>What happens if a learner does not submit an IVA?</i>
A	The learner cannot gain the qualification until an IVA has been submitted.

GUIDANCE FOR THIS ASSIGNMENT

ASSIGNMENT OVERVIEW

This Integrated Vocational Assignment (IVA) is an assessment instrument that provides the learner with an opportunity to meet all the assessment and grading criteria for the two units - *Communication for Technicians* and *Project*. It is expected that the learners will be prepared for this assessment instrument in the same way as any other assessment with the support of a comprehensive teaching scheme of work before they commence the IVA.

The work undertaken by the learner within this IVA may reflect local resources, needs and specialisms as well as the learner's career aspirations and interests. It will require the learner, in liaison with their tutor, to carry out and keep evidence of the development of their chosen project topic. The subject of the topic may arise from a chosen area of research or development, work-based experience or through guidance from their tutor or work-based supervisor.

It is strongly recommended that learners work on their own individual project. Group work should be discouraged and would only be appropriate in exceptional circumstances. Where group work is considered essential, the individual contribution of each learner during the project must be identified in order to allow assessment against all the assessment and grading criteria for the two units for each member of the group.

Activities may involve some joint research, however, it must be stressed that the work produced by each learner must be their own. Whilst group meetings will obviously show 'who does what', each learner must have opportunities to do all activities that are to generate evidence for assessment. An example here would be in the preparation of the material for the presentation - each member of the group should prepare their part of the presentation (eg plan, prepare own script and visual aids, deliver and evaluate) and not rely on one member preparing all. A further example could be the planning stage - whilst there may be an overall group plan, each individual would be expected to produce their own individual plan to meet their delegated responsibilities towards the specification and workload and this would be in addition to any overall group planning.

Tutors must ensure that all work submitted by each learner is the work of that individual. The work of any other person should be clearly attributed to the original source and should only be included in the portfolio of evidence if absolutely essential to the project. Other learners work cannot be used as evidence against any of the criteria in the two units.

Learners should be encouraged to structure their evidence to ensure that assessment can be easily carried out. Hence, each learner should submit for assessment three items of evidence - a written Technical Report, a Logbook or Diary of Events and a Portfolio of Supplementary Evidence (presented in sections against each task).

It is expected that the learners will be given help and guidance when preparing their final evidence portfolio and especially with use of appropriate referencing system(s). In particular, where it is absolutely necessary - how to indicate that work has been produced by others but used to inform their decisions.

Apart from the obvious need to support learners undertaking the IVA, tutors should meet regularly with learners to assist in the recording of learner progress etc. Detailed witness statements will be required to record and support their judgements, particularly with respect to Unit 5 assessment criteria P3, M2 & D1.

CONFIDENTIALITY - It is expected that some projects may involve the use of information and documentation which may be needed to show the connection with a real-life work situation. The centre and/or the learner must ensure that any work intended for assessment purposes (ie evidence against the assessment or grading criteria) is not confidential, commercially sensitive or likely to cause a security risk were it to be 'in the public domain'.

When assessing this IVA the following should be considered.

- In some cases the evidence for a specific assessment criterion may be found in the learner's work for a single task but it is more likely that evidence from across two or more tasks will be required if criteria are to be fully satisfied.
- Where an assessment criterion can be fully assessed by one task, this is noted below in the guidance for each task.

Task 1 - Selecting and Specifying the Project

This task provides the only opportunity to assess the following criteria:

Unit 5 – P2, P3, P4, P5 and M3

As outlined in the course 'project' unit, the best projects are the result of a genuine need or requirement. If a design and build project is undertaken, it is important to realise that the actual problem should result in a simple solution since learners do not have very long to design, build and test it. As the project supervisor, the tutor should provide the learner with guidance on this during this critical first task. It is important that the project is feasible and completed within the time available.

It is expected that all learners will generally need guidance when deciding whether their choice of project is viable. This, even for employed learners, will ultimately be the role of the project supervisor/tutor.

We recognise that many learners find the identification of a project difficult, and it should be understood that the emphasis of assessment in these units is on the project process and communication techniques used. However, each learner must be given every opportunity to select a project that is fit for purpose. Tutors should ensure that the selected project gives the learner every opportunity to achieve all the assessment and grading criteria for the units - *Project and Communications for Technicians* such as, the opportunity to discuss and agree a project specification, and the interpretation and production of simple engineering drawings/circuit diagrams, etc.

When trying to arrange a work-based type project, companies may struggle to allow their employee freedom of selection. One way to overcome this may be for the employee (the Learner) to visit different departments/sections/staff within the company and discuss areas of 'operational concern'. This would generate a selection or list of ideas for the learner to discuss with their employer and possibly develop into a suitable project. Some centres may find difficulties in allowing full-time learners freedom of selection due to the limited range of ideas a learner can generate. Often, a one to one discussion with each learner will identify an 'outside of the learning environment' personal interest that can be explored. However it needs to be remembered that the topic of the IVA must have an engineering focus set within the context of the area of study e.g. Aerospace, Telecommunications, Mechanical etc. Examples of personal interest that develop from this approach may be, an electronic tuning device for a guitar (Electrical/Electronic Engineering), a video camera mounting bracket for a sky diving helmet (Manufacturing Engineering).

Quality NOT quantity - please ensure that learners are aware of the need to provide sufficient work to address as many of the assessment criteria as they can, in order to achieve the grade

they deserve. However, no stipulation of word limit is given, or should be given, since this may make some learners feel restricted or overwhelmed. The tutor should encourage the learner to audit their own evidence against the criteria and the content section of the unit to ensure sufficient coverage.

It is important to reinforce that during this task it is essential to document what is happening and the communication that takes place between the learner and the tutor. Detailed records of the 'selection and specification' discussions should be in the logbook/diary or if in note format then kept for the learners Portfolio of Supplementary Evidence.

Task 2 – Planning the Project

This task provides the only opportunity to assess the following criteria:

Unit 5 – P6

Planning methods (use and applications of scheduling techniques such as Gantt charts, critical path methods etc.) must be taught and practised before learners attempt this task.

Tutors must make clear to learners what is meant by and the scope for contingency planning e.g. changes to timescales, access to additional resources etc. and the appropriate lines of communication.

The learner's project management skills should be developed to reflect, as far as possible, a real-life situation. As with real-life projects, there will be a need for the project leader (the learner) to make use of a range of technical and specialist skills. The project supervisor (the tutor) is a possible source as are peers, work-based links, etc. Making good use of such 'human resource' will often bring benefits to the quality of the final overall project outcome. Two things need to be dealt with in such cases:

- How best to capture the evidence of such consultations (eg tutor observation records, witness testimonies, learner's logbook).
- Ensuring that it is only the work of the learner, based on the technical/specialist advice, which is used for assessment evidence and not the work of the specialist.

It is essential that each learner starts planning their project as early as possible - taking into account the amount of time each section will consume. The project must be planned, implemented and evaluated against the original project specification.

During Task 2 the learner should be encouraged to start to think about how they will evaluate and justify their communication methods. (Unit 2 – M1 & D1)

Tutors will need to identify with the learners, the resources that will be available to them in the centre (eg access to ICT and supporting materials such as paper, overhead transparency acetate, access to workshops/laboratories, etc). However, if the learner's IVA is based at the workplace, this dialog will also need to involve the employer. It must be clear to both the learner, and in this case the tutor as well, the level of support/resource that will be made available in the work-place and how much is required of the centre.

Task 3 – Implementing the Project

This task provides the only opportunity to assess the following criteria:

Unit 5 – P7 & P8

In undertaking this task, it is common for learners to focus on the 'making of a product' and to lose sight of their original plan. Close monitoring of this task is essential to ensure that learners remain on target and keep in mind the requirements of the two units in terms of content and criteria. The 'product' may be a valuable outcome of the whole process but for the purpose of this IVA, it is the transferable skills (communication and project management skills) that are the essential part of the work undertaken.

As part of this essential aspect, learners must check their solution against the original project specification developed during task 1 and also their plan developed in task 2.

Tutors must consider how they will capture evidence for Unit 5 – P7. It is suggested this may be achieved through tutor observation records from review meetings and/or the authentication of logbook entries. Whatever method is chosen, it must be clear to all for effective recording of assessment and for verification (internal and external).

Task 4 – Presenting the Project Outcome

This task provides the only opportunity to assess the following criteria:

Unit 2 – D1 & D2

Unit 5 – P9 & P10

Centres should ensure that the learner has the necessary report writing skills before attempting this task. It may be appropriate to require the learner to write the report in a 'house style' or in a set format required by their employer.

The oral presentation will require careful planning on both the part of the learner and the tutor. The presentation should be to a suitable audience and this could include industry representatives as well as those aspiring to work in the industry within the context of the project.

It is expected that centres will prepare a tutor/assessor observation record of the presentation. This will capture evidence of; speaking, use of technical language, tone and manner, listening, impact and use of body language. This should be annotated individually for each learner. Evidence of the presentation must be made available in the learners portfolio of supplementary evidence. Cohort witness statements, (or standard copies used for every learner) are not acceptable.

If photographic or electronic recording of evidence is presented for assessment, these must all be suitably identified and any specific 'viewing' equipment must be provided for the external verifier(s) when requested. Where video or other electronic recording media are to be used, the centre staff must ensure that it is available prior to use (for the learner's training and practise), during the presentation and for use by external verifier(s) when requested. A photograph or any other electronic media record of 'performance/process' would not be sufficient on its own and would need to have a tutor record of assessment that makes clear the assessment decision based on the electronic evidence that is being presented. It must be clear to the Internal and External verifier which individual learner is being assessed where the media shows more than one individual such as in group presentations.

Mention has already been made about the submission of each learner's own work, but it must be stressed that the inclusion of mass produced or centre issued handouts, Internet or CD-ROM based downloads cannot be deemed to form part of the learner's own work. If it is necessary, to show how reference material has been used to achieve specific criteria or task, then these may be included with appropriate annotation eg 'For reference only – not assessed'). Other methods should be considered where possible (eg tutor observation records/witness testimonies) to remove such non-assessed clutter from the final evidence. It is also expected that 'teaching materials' will not be included in the final evidence.

No specific word limit has been given for the IVA, project or any part of the report, except that the work is assessed on the quality and not quantity of the work presented. Everything presented for assessment must form a valid part of the evidence for the IVA (eg technical written report, logbook/diary and portfolio of supplementary evidence). Excessive inclusions in any part of this evidence may prevent an assessor from seeing a valid and valuable part of the learner's work – hence, tutors should provide clear guidance during compilation and submission of the final evidence for the IVA.

IVA ACHIEVEMENT TRACKING SHEET

National Certificate and Diploma in Operations & Maintenance Engineering

CENTRE NAME	
LEARNER NAME	

To gain a Pass, all Pass criteria must be achieved.

To gain a Merit, all Pass and all Merit criteria must be achieved.

To gain a Distinction, all Pass, all Merit and all Distinction criteria must be achieved.

UNIT 2 : Communications for Technicians

Criteria	Met	Date	Criteria	Met	Date	Criteria	Met	Date
P1			M1			D1		
P2			M2			D2		
P3			M3					
P4								
P5								
P6								
ACHIEVEMENT FOR UNIT 2								
PASS			MERIT			DISTINCTION		

UNIT 5: Project – Operations & Maintenance Engineering

Criteria	Met	Date	Criteria	Met	Date	Criteria	Met	Date
P1			M1			D1		
P2			M2			D2		
P3			M3					
P4			M4					
P5								
P6								
P7								
P8								
P9								
P10								
ACHIEVEMENT FOR UNIT 5								
PASS			MERIT			DISTINCTION		

To achieve an overall qualification grade Learners must attempt all of the internal and external assessments set for the essential number of units that form each qualification. Learners must attempt the assessment of a unit to show that they have some of the knowledge, skill and understanding of the unit's pass criteria.

If the learner attempted these units but has insufficient evidence to be awarded a pass grade, then the units are completed units and can be graded as Unclassified.

The number of points allocated to each IVA unit is determined by the final achievement for the unit. The total number of points for the IVA is the sum of the points for the two units.

POINTS FOR UNIT 2		POINTS FOR UNIT 5	
ACHIEVEMENT	POINTS	ACHIEVEMENT	POINTS
U	2	U	2
P	4	P	4
M	8	M	8
D	12	D	12

POINTS FOR UNIT 2		POINTS FOR UNIT 5	
POINTS		POINTS	

TOTAL POINTS FOR THIS IVA	
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POINTS	GRADES AWARDED	
8	P	P
16	M	M
24	D	D

CENTRE IVA ISSUE SHEET

to be completed by the centre

Edexcel Level 3 BTEC NC/ND Operations & Maintenance Engineering INTEGRATED VOCATIONAL ASSIGNMENT

Centre Name		
Centre Number		
Learner Name		
Learner Registration Number		
Start date	Initial briefing	Review Date
All completed work must be handed in by		

*If you do not complete your assignment by the given date you will not be assessed.
If you are experiencing problems you should contact your course tutors immediately.*

SPECIFIC INFORMATION ON THE COMPLETION OF THIS ASSIGNMENT (e.g. resource availability, research opportunities, dates or events/practicals)

IVA COVER SHEET

to be completed by the learner

Edexcel Level 3 BTEC NC/ND Operations & Maintenance Engineering INTEGRATED VOCATIONAL ASSIGNMENT

Centre Name _____ Centre No _____

Learner Name _____ Learner Reg. No _____

- Label all your work and use page numbers or references to identify all components.
- Sign the declaration of authenticity.

Learner's Declaration		
I certify that the work submitted for this Integrated Vocational Assignment is my own.		
Signed:		Date:
Assessor's Declaration		
I certify that the work submitted by the learner named above is original and has been completed independently.		
Name of Assessor:	Signed:	Date: