



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

NARRATIVE DOCUMENT

PROGRAMME TITLES

HNC ORDNANCE, MUNITIONS AND EXPLOSIVES

**BEng (HONS) ORDNANCE, MUNITIONS AND
EXPLOSIVES**

**BEng (HONS) ORDNANCE, MUNITIONS AND
EXPLOSIVES (SAFETY)**

**(INCLUDES A 5-YEAR DEGREE APPRENTICESHIPS
ROUTE and MODULAR ENROLMENT FOR
SPECIFIED MODULES)**

Academic Discipline of Applied Computing

Wales Institute of Science & Art

**Validated August 2022, updated May 2023, January 2024, May 2024, February
2025**

In this short narrative document, you are asked to reflect **on the design of the programme(s)**. The ten sections given below ensure that you reflect on a number of key aspects as part of programme design processes. The sections have been chosen to reflect the University's Learning and Teaching Enhancement Strategy, Learning and Teaching Standards and the University's Graduate Attribute Framework. Further, they reflect key sector teaching and learning priorities as expressed through the Teaching Excellence and Graduate Outcomes Framework, surveys such as the UKES, NSS, PTES, and PRES, and teaching and learning priorities expressed by AdvanceHE and HEFCW).

Please do not delete the text before each box.

1. Defining characteristics & purpose

In this section, please specify briefly the defining characteristics of the programme(s) and set out the context for the later sections of this narrative document. The purpose of the programme will drive and/or inform the design. E.g. if the programme is Professional, Statutory, and Regulatory Body (PSRB) accredited or linked to the apprenticeship framework. Or, if the programme is designed for a very specific cohort. If a number of programmes are linked together in a cluster, then please explain here how the cluster operates, especially where modules are shared to a significant degree.

The Ordnance, Munitions and Explosives (OME) sector has recognised its need to build skills and competency in a critical area for the UK defence and commercial explosives enterprise. It has identified a critical skills gap caused by an ageing industry demographic within a sector which has not traditionally engaged with attracting a younger workforce through its recruitment processes. The sector is increasingly engaging with developmental activities such as developing apprenticeships to facilitate the attraction of this younger workforce. The recent success in attracting employers and apprentices to the UWTSD OME apprenticeship offer is an example of this successful engagement strategy, especially as this growth has come during a period of uncertainty, both financial and as a result of the COVID 19 pandemic.

The current degree programme has five pathways which reflect the specific requirements of the sector skills gaps. As a result of discussion and feedback from industry stakeholders over the last four years it has been necessary to restructure the provision. The existing five titles have been reduced to a single stream and introduce a full-time offer which includes a year in industry placement. Several significant employers in the sector and a wide range of students were consulted, including students on the existing courses. This feedback supported the need for the proposed changes to the current portfolio of programmes.

The undergraduate programmes within the portfolio build a strong foundation of skills and knowledge for the professional apprenticeship. While students are equipped with knowledge of the current state of the industry, there is also an emphasis on skills for lifelong learning, enabling them to update their skills throughout their careers.

Both UWTSD and the apprenticeship programmes have been accredited by the Institute of Explosive Engineers (IExpE). The portfolio of programmes (HNC and Degree) will also enhance the University's vocational mission by strengthening links with national and international industry. The apprenticeship programmes offer many opportunities for students to gain the transferable skills necessary in the workplace,

such as effective team-working and problem-solving, while updating skills in line with changes in technology.

In providing the portfolio of full-time, part-time and apprenticeship programmes, the intention is to meet the needs of students who require a mix of hybrid skills, as well as the needs of those wishing to pursue more specialist interests.

The *BEng Ordnance, Munitions and Explosives (Safety)* pathway will meet the needs of Defence Nuclear Organisation (DNO) apprenticeship students. The pathway will only vary slightly from the main BEng Ordnance, Munitions and Explosives programme (by 60 credits) but will serve to tailor the programme to the specific needs of the DNO organisation.

The inclusion of occasional modules is crucial for those balancing professional and personal commitments while wishing to undertake specialised learning within higher education. Occasional modules provides the flexibility needed by Employers, allowing individuals employed within the sector the ability to tailor their education and enhance their expertise in specific areas relevant to their careers, acquiring practical, up-to-date skills that boost their value to employers. The modules available as occasional modules are:

Modules open to suitably qualified students:

ACDB4005 Principles of Systems Engineering
ACDA4019 Principles of OME
ACDA4020 Human Factors in High-Risk Environments
ACDB5013 Safety & Hazard Assessment
ACDA5024 Technical Authoring
ACDA6022 OME Safety Management & Legislation

Modules open to Defence Nuclear Organisation (DNO) employees only:

ACDA5023 Nuclear Safety

Modules open to suitably qualified students who meet higher entry requirements:

ACDB5015 Advanced Physics of OME (Level 4 Physics required for entry)
ACDB5007 Computer Aided Engineering (Level 4 Mathematics and Physics required for entry)
ACDC5009 Electromagnetic Radiation (Level 4 Physics required for entry)
ACDA5021 Systems Engineering (Level 4 Mathematics required for entry)
ACDA6020 Advanced Chemistry of OME (Level 4 Chemistry required for entry)
ACDA6021 Data Capture and Evaluation (Level 4 Mathematics and Physics required for entry)
ACDB6016 Materials Science (Level 4 Mathematics and Physics required for entry)
ACDB6008 Scientific Principles of OME Design (Level 4 Mathematics and Chemistry required for entry)

2. Student engagement

In this section, please reflect briefly on how you have worked together with students in partnership in relation to the design of the programme(s);

Please do **NOT** focus in this section on a description of the consultation process but rather focus on the impact that the engagement with students has had on the design and validation of the proposed programme(s).

This may mean that you have consulted with students face-to-face in a focus group or as part of a Student Staff Consultative Meeting. It may also be that, as part of the design stage, you have considered feedback from students (e.g. through the review of module questionnaire feedback, programme level feedback, feedback at Student Staff Consultative Committees, partner student engagement survey feedback, or feedback given as part of national surveys such as the NSS, UKES and PTES). The engagement method chosen depends on the programme to be (re)validated and the cohort that the programme(s) aim(s) to attract.

Where a programme is being developed in a subject area new to the University, the partner or both, programme teams are still expected to consider student feedback. E.g. if students currently studying on programmes offered by the Academic Discipline/Institute/partner persistently indicate concerns in relation to a particular issue (e.g. 'learning opportunities', 'assessment and feedback' or 'resources'), then this should be taken into account when designing a new programme.

The key question to answer for this section is: what changes have you made or what elements have you added to the programme as a result of student engagement and feedback processes?

Students have the opportunity of making their views known through a variety of mechanisms. These occur at various times throughout the academic year, and are used to highlight problems in both the long and short term. All students contribute to the Staff/Student meetings, and these are formally documented. Each cohort elects a representative to serve on the Staff/Student Committee. Feedback has been gained from discussions with a number of employed students to gain greater insight into the current practices of organisations. Employers and students also have the opportunity to feedback via their individual OME Apprenticeship Liaison Officer during their review activities.

Based on the feedback received, a number of actions have been taken:

1. Students have expressed concerns that the current programmes are too generic and lack sufficient specialisation and contextualisation to meet current industry requirements. The lecturing team have been tasked with ensuring delivery is contextualised and where possible industry guest speakers are invited to demonstrate how key learning is used within industry.
2. Students studying on the OME degree programme have specifically requested more content on OME in the early part of the programme. The new programme structure has changed the Principles of OME module from level 5 to level 4, bringing delivery earlier in the programme. Also, the delivery of Chemistry of OME will be focused on the Joint Services Publication (JSP) 333.
3. Specialist modules: employers and students have asked for wider integration and group assessments and working in modules. A group exercise around the 5 pathway modules has been introduced which encourages the 5 pathway constituents to work together in teams to design, build and dispose of an OME item.

4. Both students and employers have requested that more practical learning activities are included in the programme, especially around the links between Chemistry and OME. Chemistry practical sessions have been added to the Chemistry module delivery which aims to build an applied understanding of content rather than just theoretical knowledge.
5. Students and employers have requested a clearer understanding of the work-based learning and assessment requirements for the Major Project module and the End Point Assessment activity. Initial programme induction will now include briefing by the End Point Assessor and the provision of an EPA handbook which sets out the end point assessment timeline, process and expectations. A zero credit End Point Assessment (EPA) for Degree Apprentices module (ACDA6023) has also been added to the course structure to enhance clarity.

3. Teaching, Learning, and Enhancement

The University's Learning and Teaching Enhancement Strategy focuses on four key principles for all teaching and learning:

- ❖ collaborative
- ❖ professionally focused
- ❖ inclusive
- ❖ personalised.

In this section, please reflect on how the programme ensures that learning and teaching is **collaborative** and **personalised**¹. Questions to consider include:

- How does the programme ensure that students are provided with systematic opportunities to learn with others? This could, for example, be as part of a project or assessment, as part of the delivery model of the programme, or through the VLE (e.g. forum, blogging tool).
- How has the programme embedded an approach to learning and teaching that fosters partnership between staff and students and a strong learning community?
- Does the curriculum provide students with opportunities to shape their own programme and /or learning?
- In what ways are individual learning needs taken into account so that all students are supported appropriately and empowered to fulfil their own potential (e.g. through individualised academic support and /or feedback)?
- How does the programme ensure that students continue to engage strongly with their studies?

There is no preferred style of teaching for the programme as a whole and consequently a variety of techniques including lectures, demonstrations, assignments, projects, seminars, tutorials and student presentations. Developing

¹ The key principles of inclusive and professionally focused are covered in separate sections below.

the ability to learn and apply knowledge independently is, however, a primary focus of the learning and teaching strategy.

The team believes that subjects such as OME apprenticeships can feel remote from typical uses of the technology if taught from a purely theoretical standpoint. The use of practical sessions, however, can make the subject far more relevant to workplace activities. This approach is central to the teaching and learning strategy of the programme which takes into account the demands of working and studying whilst on programme and the level of support to ensure a successful outcome.

The development of intellectual skills such as analysis, innovation, critical appraisal and the like, are themes throughout the formal classes and learning process.

Lectures are used to explore concepts and theories and develop knowledge for underpinning advanced technical skills. Laboratory workshops and tutorials are used for solving complex problems using appropriate methodologies, technologies, and research materials.

General educational course aims, and objectives are achieved in all modules, and programme-specific aims and objectives are achieved when it is appropriate to do so. Specific details of the combination of lectures, tutorials etc. are given in each of the modules.

Learning and teaching material is available through the VLE in support of classroom-based learning. The COVID-19 pandemic provided an opportunity to develop a hybrid approach for our programmes, but the majority remains on-campus.

Where a hybrid approach is adopted recorded material and online discussion forums, via the VLE, support the learning and provide students with the opportunity to actively engage with their peers using a combination of interactive labs and live video meetings. To ensure continuous engagement, online support sessions are arranged on a regular basis, attendance at these is monitored. VLE engagement tools are employed.

Because the apprenticeship programme attendance model is block release, support sessions or seminars are provided to students, particularly in the analytical modules. This allows students to attend a session with fewer students present, which encourages questions and working at their own pace. In particular, support sessions for the Maths and Physics modules are routinely offered. Students are encouraged to contact staff outside lectures if they require assistance.

Students participate in group work activities as well as individual working, as this is an important part of their working lives. Several modules incorporating group working elements are part of the delivery structure.

The Academic Discipline employs online marking, and individual feedback is provided in accord with the University Regulations. This allows students to have individualised academic support.

Students are able to refer to feedback on Moodle at any point of the course of their academic career at UWTSD.

a) The overarching assessment strategy used for the programme(s). Questions to consider include:

- How is assessment used to ensure that students develop and build on key skills as they progress through the programme?

- Does the programme include formative assessment opportunities to support students to develop their skills and learn from feedback?
- How has the programme team ensured that the assessments used for individual modules form a coherent whole?
- Where innovative assessment methods are used, how has the programme team ensured that students are appropriately prepared for such assessments?

The form of assessment chosen for each module not only reflects the achievement of the learning outcomes for that module, but normally reflects the vocational, applied nature of the programmes.

Traditional formal time-constrained assessment is by means of tests and examinations, normally of two-hour duration. To help authenticate student coursework, some modules require that the student and lecturer negotiate the topic for assessment on an individually or on a group basis, allowing the lecturer to monitor progress.

Some modules where the assessment is research-based, such as Scientific Principles of OME Design and Systems Engineering, require students to undertake group projects and present their research findings to the lecturer and their peers, followed by a question-and-answer session. Similarly, many of the more 'practical' modules require a final demonstration of the product created, during which the lecturer may question the student regarding design decisions made.

Such assessment strategies are in accord with the learning and teaching strategies employed by the team, that is, where the aim is to generate work which is mainly student-driven, individual, reflective and vocationally-orientated.

The combination of formative and summative assessments to supplement student learning, including tests, written exam, practical exam, coursework, portfolio, group work and oral presentation are used throughout the programme.

b) How does the programme / set of programmes ensure 'rigour and stretch'?
Questions to consider include:

- How does the programme challenge all students to achieve their best work and encourage them to take responsibility for their own learning?
- How does the programme encourage students to formulate and explore their own questions, problems and scenarios and develop throughout the programme as independent learners?
- How does the programme provide students with opportunities to explore ideas or concepts in depth and bring information together from different topics?

All OME programmes within the Institute are informed by an experiential learning pedagogy. The implication of this is that we consider the Project, Dissertation, and Research Methods to be the core elements of the programme into which the other ("taught") modules feed.

The student-centred nature of these modules allows for "learning methods" that are "more open-ended, participative, diverse and interactive than is often the case in

academic teaching" (Advanced HE Education for Sustainable Development Guidance, 2021). The following ESD characteristics are enabled:

- Systems thinking
- anticipatory thinking
- normative competency
- strategic thinking
- collaborative thinking
- critical thinking
- self-awareness
- integrated problem-solving competency

These characteristics are in keeping with UWTSD's stated aims to produce graduates who have well-developed competencies in creative problem-solving, teamwork, communication, and who have a high level of self-reflection at a personal and professional level.

Staff expertise and their links with industries enable the programmes to place an emphasis on skills and knowledge in theoretical and practical applications, and to develop intellectual, professional and personal skills in learner's subject area. The modules' aim, content and assessment are designed to place an emphasis on acquiring and applying principles of the subject in the solution of real-world scenarios.

For the Major Project, students themselves choose a topic of interest which is focused on their workplace role and can be supported by their employer. Academic staff guidance and supervision are provided to ensure students are supported through the project. This allows them to take responsibility for their learning, challenging their abilities and critical decision-making, which will help within their career pathway aspirations or future employment.

4. Equality and Diversity

In this section, please reflect briefly on equality and diversity in relation to the proposed programme(s).

- a) Are there any E&D implications in relation to this programme? E.g. Any **MAIN** activity associated with this programme that could present problems for students with additional requirements or disabilities.

The University's policy² is fully adhered to. Students with disabilities who may experience any issues accessing required hardware or software to complete assessments are given appropriate differentiated assessments in accord with the instructions from Student Services.

² <https://www.uwtss.ac.uk/media/uwtss-website/content-assets/documents/strategies-policies/Equality-and-Diversity-Annual-Report-1617-1.pdf>

Due to nature of the work involved in OME situation in the workplace, employers would need to take a case-by-case approach to individuals who may have either visual or hearing limitations.

- b) How does the programme / do the programmes ensure that teaching and learning is inclusive and that students from all cohorts obtain positive outcomes?

In relation to (b) you may, for example, want to reflect on the ways you have ensured that the programme content, its teaching and learning delivery or assessment methods are inclusive and appropriate for the specific cohort(s) that the programme(s) aim(s) to attract.

E.g.:

- If your programme attracts a large proportion of mature students returning to education or students predominantly from a widening access background, you may want to reflect on how you have addressed in the design of the programme any potential issues that such students may have re the transition to HE / return to education;
- If your programme attracts a large proportion of students with a specific learning difficulty, you may want to detail how you have taken this into account in relation to the delivery of the programme;
- If the programme is part of a larger progression route, how have you ensured that progression between awards and levels is seamless?
- If the programme is/are offered bilingually or through the Medium of Welsh, how are you ensuring appropriate language support for these students? **OR** how has the programme team ensured that effective language support in place for students whose first language is not English or Welsh?
- This could also mean reflecting on the need for a diverse curriculum and reading list.

Your reflection in this section 3 will depend on the type of cohort that the programme attracts / is expected to attract.

The students entering the programme are a mix of recent school-leavers and professionals who are already in full-time employment and are seeking to study on a part-time basis. The Institute offers a number of OME apprenticeship programmes, and these have proven to be very successful in recruiting employed OME students. This trend is set to continue, and consequently the Institute has taken steps to enhance its current offer with the inclusion of full-time provision within the portfolio.

Recruitment of students on this programme is led by industry employers working with the University's Apprenticeship Unit.

As with any undergraduate studies, some of our students also come from a non-traditional background, and/or have been away from education for a long time. The Programme Team understand the challenges faced by those students during their time in Higher Education, in particular the importance of balancing work-life commitments and the demands of OME employers.

Recognising the challenges faced by part-time students, the timetables are arranged so that appropriate modules are scheduled during four 2-week blocks in semester 1 and 2 and a 1 week block in semester 3 of attendance plus scheduled assessment.

This allows students and employers to plan breaks from employment activities, which are supported by employers.

Before a student arrives - and again during the induction week - the Programme Manager and Apprenticeship Liaison Officer will discuss the block attendance requirement, programme structure, course content, delivery, assessments and overall workload with each student and employer. This allows the learners to prepare and plan for the academic year, manage their workload and family and social commitments.

Occasionally part-time students struggle with their work commitments for various reasons, such as taking on a new role, involvement with a new project, changing job, etc. During those times the Programme Manager and Apprenticeship Liaison Officer provide all the necessary support and guidance required to enable them to stay and complete the programme. The Computing Department policy of making Programme Managers the students' Personal Tutors provides an effective means of communication, and for promptly identifying any issues that may arise during the course.

Another area where the Institute is mindful of the pressures on part-time students is the assessment schedule. The Team has made every attempt to ensure that assessments are spread out in a suitable manner to avoid an excessive workload at any one time for students. With regular Staff-Student Committee Meetings and Academic Discipline Boards, students have an opportunity to discuss any issues or bring them to the Programme Team's attention.

- c) When admitting students to this programme / these programmes are there specific equality and diversity implications that need to be considered and/or raised with applicants?

Due to nature of the work involved in OME situation in the workplace, employers would need to take a case-by-case approach to individuals who may have either visual or hearing limitations.

5. Graduate Attribute: Employability

The University defines its graduates' key competencies in Employability as:

Communication	Leadership	Collaboration	Creativity
Enterprising	Problem solving	Negotiating	Adaptability
Emotional Intelligence	Awareness	Project Management	Resourceful

In this section, please reflect briefly on how you have embedded employability within the programme(s).

You may want to reflect briefly on, for example:

- the various skills gained by students (e.g. through the varied forms of assessment embedded in the programme). UKES outcomes can be used to identify skills gaps and skills development;
- DLHE / Graduate Outcomes statistics in order to tailor the programme appropriately;

- the opportunities for work/industry experience embedded within the programme(s) or the Professional, Statutory, and Regulatory Body (PSRB) accreditation or any other additional qualification(s) students can gain;
- the engagement with employers in relation to the design of the programme(s);
- the employer/sector-engagement embedded within the delivery of programme for students.

The modules within OME programme enable students to study a wide range of general and specialised OME skills targeted directly at the OME sector. Graduates from this programme will carry out a range of technical, engineering and scientific activities which may include laboratory-based investigations, engineering studies and scientific experimentation in their specialist field. They will analyse, interpret and evaluate technical information, concepts and ideas and use these to develop subsequent products, experiments or investigations and to propose solutions to problems.

Throughout the programme students will develop employability competencies at module level and through the portfolio of evidence at the workplace. There are a number of modules at each level that will assist develop these competencies. To name a few, Study Skills at level 4 will develop communication, collaboration, awareness, etc. At level 5 Systems Engineering and Work-based Group Project modules will develop leadership, problem solving, negotiating, project management, etc. At level 6 Scientific Principles of OME module will develop project management, emotional intelligence, problem solving, etc.

They can apply knowledge of underlying OME principles to implement new processes according to the literature or input from senior team members. They can work autonomously and as part of a wider specialist team, taking responsibility for the quality of the work that is undertaken and delivering value to their organisation.

They will be proactive in finding solutions to problems, can identify areas of business improvement and propose innovative ideas. In all contexts working safely and ethically is paramount. All OME professionals are required to operate under highly-regulated conditions because of the need to control safety and quality.

Although the pathways within degree have been removed, the apprenticeship standards still retains pathway, which are:

- Technical Research and Development Professional
- Safety Professional
- Manufacturing and Processing Professional
- Breakdown and Disposal Professional
- Test and Evaluation Professional

Each OME apprentice will have core knowledge/skills that are common to all, and specific knowledge/skills required for their specialist apprenticeship pathway. An OME professional must be competent and capable of working within their particular domain and of collaborating effectively with other OME professionals in parallel sectors.

For DNO students in particular, the new degree pathway BEng Ordnance, Munitions and Explosives (Safety) will meet the organisation's specific needs while still adhering to apprenticeship standards. These students will adhere to the Safety Professional apprenticeship pathway.

Students on this programme develop a broad range of technical skills and will study several topics related to OME. Additionally, graduates would be able to lead teams and manage projects.

It is expected that graduates exiting the five pathways within the apprenticeship would seek positions such as: (note. Although there are no longer pathways within the OME degree programme these still apply to the overarching apprenticeship).

Research and Development

- Product Engineer/Designer
- Explosives Chemist
- Analytical Instrumentation
- Industrial Explosives Chemist, Ballistician
- Energetic Research Scientists, Terminal Effects Designer

Safety (especially DNO students)

- Explosive Safety Representative
- Safety Advisor, Safety Manager
- Training & Assessment Officer
- Dangerous Goods Safety Advisor
- Transport Manager
- Custody Holder, Magazine Manager

Manufacturing and Processing

- Manufacturing/Process Engineer
- Quality Assurance/Control Engineer
- Maintenance Engineer, Process Design Engineer
- Process Chemist, Process

Breakdown and Disposal

- Disposal Officer
- Decontamination officer
- Project Engineer

Test and Evaluation

- Range Manager
- Trials Manager/Engineer
- Test & Evaluation Instrumentation Scientist
- Range Safety Officer
- Facility Manager

The OME Department of the Institute has well-developed links with industry through academic programmes and the Industry Liaison Group (ILG), which feed valuable high-level practical and content support into the programmes.

The Programme Team believe that the inclusion of high-level theoretical and work-based practical content into the curriculum, demonstrates that students understand and can apply the theoretical concepts studied in real contexts; such practical, real-world application will enhance their skills, and hence their employability, without sacrificing academic rigour.

All apprentices funded through English Apprenticeship levy must complete an End Point Assessment (EPA) along with the degree. The EPA is portfolio of evidence gathered throughout their period of study which maps workplace activity against

knowledge, skills, and behaviour of the apprenticeship standards. The portfolio of evidence demonstrates and confirms that the apprentices meet key employability competencies. The EPA is included in the module structure as ACDA6023 End Point Assessment (EPA) for Degree Apprentices.

Industrial links include Defence Science and Technology Laboratories (DSTL), Atomic Weapons Establishment (AWE), Defence Nuclear Organisation (DNO), BAE Systems, Defence Equipment & Support (DE&S), Roxel, QinetiQ, Illusion Pyrotechnics and DNV.

6. Graduate Attribute: Digital Skills

The University defines its graduates' key competencies in Digital Skills as:

Digital transformation 4.0	On-line unified communication	Troubleshooting & problem solving	Algorithms & system design
Artificial Intelligence	Virtual & Augmented Reality	Data analysis & visualisation	Mobile/App expertise
Cyber security, governance & ethics	Smart technologies	Social Media harnessing	Research & information gathering

In this section, please reflect briefly on how you have embedded digital skills within the programme(s).

You may want to reflect briefly on, for example:

- the various digital skills gained by students (e.g. through the varied forms of assessment embedded in the programme). UKES outcomes can be used to identify skills gaps and skills development;

In today's technological world, digital skills are essential for success. According to research conducted by JIS, students with digital skills are more effective and employable upon graduation.

Digital skills not only include practical, cognitive and key subject specific skills, but how they relate to the contexts within which they will be applied, offering students new tools and technologies which will enable them to think differently.

The proposed programme blends a wide range of key skills in this area to maximise pedagogy and employability.

7. Graduate Attribute: Learning for Life

The University defines its graduates' key competencies in Learning for Life as:

Personal Development & Planning	Reflection & Self-Reflection	Challenge	Well-being & Resilience
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Critical Thinking	Rights & responsibilities	Ethics & values	Diversity
Sustainability	Time management	Socio-political systems	Cultural & linguistic expression

In this section, please reflect briefly on how you have embedded learning for life within the programme(s).

You may want to reflect briefly on, for example:

- the various skills gained by students (e.g. through the varied forms of assessment embedded in the programme). UKES outcomes can be used to identify skills gaps and skills development;

In designing these programmes, and as a direct response to industry demand, we have created future-proofed modules which incorporate known and emerging industry trends and technological advancements to stretch and challenge the learner in those areas outlined above. These programmes have also enabled industry to recruit and develop both new industry recruits to meet future skill gaps and existing staff who also undertake these activities as part of their ongoing professional development.

The development of our programme within WISA originates as a direct response to challenges set by the OME sector for accredited qualifications that lead to the development of Suitably Qualified and Experienced People (SQEP) within the industry.

Upon completion, our OME HNC programme will allow seamless progression into the Undergraduate Degree Programme. Completion of the Undergraduate Degree has been accepted as an entry route into the Explosives Ordnance Engineering Postgraduate programme at Cranfield University.

8. Non-standard issues

Please use this section to explain any non-standard issues associated with the programme.

You need to use this section, for example, where:

- the language of delivery is not solely English;
- the programme entails collaboration with an external partner (e.g. re delivery, facilities);
- the programme deviates from the standard norms and regulations (e.g. re length of programme, workload / assessment regulations etc.).

The OME professional Degree Apprenticeship is a 5-year block release programme.

Students on the programme will have both off the job and on the job learning and development aspects to the programme which contributes to the achievement of the apprenticeship.

Due to the sensitivity of the type of work students typically undertake in the workplace, some assessment and end point assessment evidence will have a level of confidentiality to it.

The part-time students will infill with the degree apprenticeship students and therefore complete their award in 5 years.

9. Additional academic costs for students

In this section, please detail whether there are any additional academic costs for students associated with the programme or its modules. Additional academic costs are costs for students directly associated with the programme of study in addition to the tuition fee costs.³ Please **quantify** any additional costs *and* specify whether such costs are **mandatory**, **necessarily incurred** or **optional**.⁴

Additional Cost Description	Additional Cost Value ⁵	Mandatory	Necessarily Incurred	Optional
Cost of Certification for OME Safety Course	£30	☒	☐	☐
Field trips	Various (supported by employers)	☐	☒	☐

All additional costs detailed in this section are indicative. It is recognised, for example, that the precise costs associated with a field trip could vary from year to year.

³ E.g. costs associated with the purchase of books, IT equipment and any other course related equipment as well as costs associated with course related trips and placements etc.

⁴ An example of **mandatory costs** are costs that are associated with a field trip that all students are required to participate in as part of their studies. These do not include costs for sundry (e.g. purchase of a coffee or lunch during a trip) but focus on costs associated with, for example, travel and accommodation or the Institute's fee for participation. An example of **necessarily incurred costs** are costs associated with the purchase of equipment. E.g., a student on a Fine Art course could have additional costs associated with the purchase of art materials. **Optional costs** are, for example, costs associated with a field trip or placement that is not a compulsory part of the course. If all books or software that a student needs for the course are available in the library or via IT&S, then no additional costs should be entered here.

⁵ It may be useful here to specify a range rather than a precise additional cost value. E.g. students may be able to keep costs down by purchasing a second-hand textbook.

10. Sustainability

In this section, please reflect briefly on the way you have embedded Education for Sustainable Development and Global Citizenship (ESDGC) within the programme(s) as a whole (see [Education for Sustainable Development \(qaa.ac.uk\)](http://qaa.ac.uk)).

These programmes are fundamentally based on the Welsh Government priority, Education for Sustainability and Global Citizenship (ESDGC) that works within the Sustainability Statement and the Well-being of Future Generations (Wales) Act 2015.

The Wales Institute of Science & Art recognises three categories for addressing ESD:

- ❖ Wider context and employment – the need for HE to both respond to and help shape real-world conditions
- ❖ Policy and mandate – expectations from funding councils, and increasingly, from HEI senior managers
- ❖ Education and quality – quality and innovative teaching and learning

thus recognising:

- the need to embed ESD within the curriculum
- the importance of relating ESD to other important agendas such as employability, enterprise, quality and internationalisation
- the need to prepare people to cope with, manage, and shape social, economic and ecological conditions characterised by change, uncertainty, risk, and complexity
- the importance of ensuring cross-disciplinary and cross-institutional working since sustainability issues cannot be understood through single disciplines
- The fact that sustainability issues often present ethical challenges and dilemmas

The End Point Assessment requirement for the apprentice to demonstrate attainment of Knowledge, Skills and Behaviours within the OME apprenticeship standard ensures relevant aspects of sustainability are taught within the programmes. This is achieved by incorporating these issues as part of the professional, legal and ethical considerations contained within the programme. The EPA is included in the module structure as ACDA6023 End Point Assessment (EPA) for Degree Apprentices.

Please map the programme(s) against the Well-being of Future Generations (Wales) Act.⁶

	<i>Positive</i>	<i>Negative</i>	<i>Reasons / justification</i>
A prosperous Wales (efficient use of resources, skilled, educated people, generates wealth, provides jobs).	☒	☐	Enhanced career opportunities become available on completion of the programme
A resilient Wales (Maintain and enhance biodiversity and ecosystems that support resilience and can adapt to change (e.g. climate change).	☒	☐	Issues relating to environmental risk and suitability are considered
A healthier Wales (People's physical and mental wellbeing is maximised and health impacts are understood)	☒	☐	Enhanced economic prospects for the students..
A Wales of cohesive communities (Communities are attractive, viable, safe and well connected)	☐	☒	The programmes are delivered to a niche industry and does not provide for collaborative projects
A globally responsible Wales (taking account of impact on global well-being when considering local social, economic and environmental wellbeing)	☒	☐	Ethical and professional responsibilities explored
A Wales of vibrant culture and thriving Welsh Language (culture, heritage, and Welsh language are promoted and protected. People are encouraged to do sport, art and recreation).	☐	☒	The programmes are offered nationally to a niche industry.
A more equal Wales (people can fulfil their potential no matter what their background or circumstances)	☒	☐	Enhanced economic prospects for students.

⁶ Not applicable for students studying outside Wales at partnership institutions/learning centres.