Qualifi Level 7 International Diploma in Process Safety Management

Specification (For Centres)

June 2021

About QUALIFI

QUALIFI provides academic and vocational qualifications that are globally recognised. QUALIFI's commitment to the creation and awarding of respected qualifications has a rigorous focus on high standards and consistency, beginning with recognition as an Awarding Organisation (AO) in the UK. QUALIFI is approved and regulated by Ofqual (in full). Our Ofqual reference number is RN5160. Ofqual is responsible for maintaining standards and confidence in a wide range of vocational qualifications.

As an Ofqual-recognised Awarding Organisation, QUALIFI has a duty of care to implement quality assurance processes. This is to ensure that centres approved for the delivery and assessment of QUALIFI's qualifications and awards meet the required standards. This also safeguards the outcome of assessments and meets national regulatory requirements.

QUALIFI's qualifications are developed to be accessible to all learners in that they are available to anyone who is capable of attaining the required standard. QUALIFI promotes equality and diversity across aspects of the qualification process and centres are required to implement the same standards of equal opportunities and ensure learners are free from any barriers that may restrict access and progression.

QUALIFI's policy document for learners with specific requirements or who need special consideration is available for centre reference. Centres are responsible for reviewing the applicant's ability to complete the training programme successfully and ultimately achieve a qualification. The initial assessment by the centre will need to take into account the support that is readily available or can be made available to meet individual needs as appropriate. The centre must also consider prior learning and qualifications and they must be in a position to make a judgement on the learner's entry requirements.

Supporting Diversity

QUALIFI and its partners recognise and value individual difference and have a public duty to promote equality and remove discrimination in relation to race, gender, disability, religion or belief, sexual orientation and age.

Learner Voice

Learners can play an important part in improving the quality of this course through the feedback they give. In addition to the ongoing discussion with the course team throughout the year, there are a range of mechanisms for learners to feed back about their experience of teaching and learning. This can include questionnaires and surveys to allow both centres and QUALIFI to understand how we can improve the learner experience.

Contents

1 Introduction

1.1 Why Choose QUALIFI Qualifications?

QUALIFI qualifications look to provide a realistic and broad opportunity for learners seeking career and professional development. They will support learners in realising their potential and provide clear objectives.

These objectives are to:

- provide career path support to learners who wish to develop their management skills, enterprise capabilities and opportunities in their chosen sector
- improve learner understanding of any given business environment and organisations and how they are managed and developed
- develop skills and abilities in learners to support their professional development.

Our qualifications provide a rich mix of disciplines and skills development opportunities. Learners will gain insight into the functioning, objectives and processes of organisations, appreciating their diversity and the influences and impact of external forces on them. The fast-changing and complex business environment and different organisational ability to stay resilient and respond positively to change and opportunities will be explored.

Our qualifications will develop learners' ability to:

- apply analytical and evaluative techniques and to enhance those skills
- investigate issues and opportunities
- develop their awareness and appreciation of managerial, organisational and environmental issues
- use management techniques and practices in imaginative ways
- make use of relevant information from different sources
- develop and encourage problem solving and creativity to tackle problems and challenges
- exercise judgement and take responsibility for decisions and actions
- develop the ability to recognise and reflect on personal learning and improve their personal, social and other transferable skills.

1.2 Employer Support for the Qualification Development

The development of this qualification has been initiated and guided by discussions and idea sharing with a range of employers, providers and existing centres demonstrating the rigor, validity and demand for the qualifications.

Discussions and feedback have been taken throughout the development of the qualification on content, the potential learner audience for the qualification and assessment methods, ensuring a valuable experience and a recognised set of skills, knowledge and understanding is realised.

1.3 Qualification Titles and Codes

This qualification has been accredited to the Regulated Qualification Framework (RQF) and has its own unique Qualification Accreditation Number (QAN). This number will appear on the learner's final certification document. Each unit within the qualification has its own RQF code. The QAN for this qualification is:

Qualifi Level 7 International Diploma in Process Safety Management 603/7608/9

1.4 Awarding Organisation

QUALIFI LTD

2 Qualification Purpose, Rational, Aims Outcomes

2.1 Qualification Purpose

The level 7 International Diploma in Process Safety Management is a qualification for professionals employed and aspiring to work in process industries. It is aimed at learners who are responsible for developing and applying process safety management on a day-to-day basis in an organisation.

The Diploma is designed to provide learners with the expertise required to undertake a career as a process safety manager and it also provides a sound basis for progression to postgraduate study.

We hope that centres and learners take the opportunity to learn a great deal from this programme that will provide relevant new skills and knowledge. It is envisaged that this programme will encourage both academic and professional development so that learners move forward to realise not just their own potential but also that of organisations across the industry.

2.2 Rationale for the Diploma

The rationale of the programme is to provide a career path for learners who wish to develop their practice capabilities within the process safety sector. The expected outcome of the Diploma, which is the achievement of a recognised UK qualification, is for learners to develop the skills required by organisations and the industry globally. This qualification will:

- prepare learners for employment; and
- support a range of roles in the workplace.

This qualification is suitable for part-time learners in the workplace but is equally appropriate for full-time learners who can also participate in formal work placements or part-time employment. Learners can progress into or within employment in the process safety sector.

2.3 Overall Aims of the Diploma

The Level 7 International Diploma in Process Safety Management will require Learners to evaluate a wide range of process safety management standards, risk-based process safety techniques and human factors and process safety culture.

By analyzing and making critiques process safety standards, learners will examine how the different functions and disciplines affect an organisation's process safety strategy, success and the way that it operates.

The qualification requires learners to demonstrate a range of skills required of executive level management including problem solving, research and analytical skills. The qualification will enable learners to deal with the complexities of leadership and strategic management in a business context and to develop their ability to lead change in organisations.

The Qualifi Level 7 International Diploma in Process Safety Management aims to give learners the opportunity to:

1. Gain a recognised qualification from an internationally recognised awarding organisation.
2. Learn from a curriculum supported by the most recent content relevant to a contemporary business environment.
3. Develop new skills and knowledge that can be applied immediately.
4. Prepare for higher level positions in management through personal and professional development as a leader that thrives in complex and globally diverse environments.
5. Have assessments marked and moderated by respected professionals with practical experience across a number of business sectors and management fields.
6. Progress along a pathway to gain a higher-level qualification.

2.4 Learning Outcomes

The overall learning outcomes of the Diploma are to:

1. Apply and make critiques of process safety implementation standards
2. Evaluate the role of strategic leadership in risk-based process safety
3. Review the impact of Covid in an organisation's process safety culture
4. Understand and apply the principles of Inherently Safer Designs in process safety
5. Analyse anatomy of process safety incidents by applying hazop techniques
6. Manage strategic risks in organisation process safety domain
7. Analyse the impact of Artificial Intelligence (AI), Machine Learning in process safety management
8. Assess process safety culture, competency development in process safety management

These are the overall learning outcomes in line with a level 7 qualification. The learning outcomes for each of the units are identified in Appendix 1 within the descriptors.

3 Delivering the Qualifications

3.1 Quality Assurance Arrangements

All centres go through an application and approval process to be recognised as an approved centre. Centres must have in place qualified and experienced tutors. The experience of tutors and their ability to support learners will be important. Centres must commit to working with QUALIFI and its team of Quality Reviewers/External Verifiers. Continuing professional development (CPD) for tutors is also required.

Approved centres will be monitored by QUALIFI External Quality Reviewers (EQAs) to ensure that learners are provided with appropriate learning opportunities and guidance. EQAs will ask to see and discuss a centre's assessment plans. The suitability of these plans will be agreed with the centre.

QUALIFI's guidance on invigilation, preventing plagiarism and collusion will apply to centres.

Trainer Requirements

- Trainers must be appropriately qualified and occupationally competent in the areas in which they are training. They must have a minimum of 4 years' experience in process safety for which they will be training and supervising
- They must hold an engineering degree in chemical, instrumentation, mechanical or relevant process safety discipline
- They must hold minimum membership level of IOSH at GradIOSH level

Assessor/Examiner Requirements

- Assessors must be appropriately qualified and occupationally competent in the areas in which they are assessing. They must have a minimum of 5 years' experience in process safety for which they will be assessing
- They must hold an engineering degree in chemical, instrumentation, mechanical or other relevant process safety discipline
- They must hold a Level 3 Award in Education and Training or equivalent
- They must hold minimum membership level of IOSH at CMIOSH level

Internal Verifier/Moderator Requirements

- Internal Verifiers must be appropriately qualified and occupationally competent in the areas in which they are moderating. They must have a minimum of 4 years' experience in occupational health and safety for which they will be verifying internally
- They must hold or be working towards a Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice and/or Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practice
- They must demonstrate that they have undertaken Continued Professional Development (CPD) activities relating to occupational health and safety or auditing quality assurance to maintain and update their skills and knowledge within the last year

3.2 Access to Study

All learners should be invited to an induction event to be introduced to the programme in detail through presentations and discussions with tutors and the centre support team.

All learners should be issued with the Certificate handbook, a timetable and meet with their personal tutor and fellow learners. Centres should assess learners carefully to ensure that they take the right qualification and the right pathways or optional units, to allow them to progress to the next stage.

Centres should check the qualification structures and unit combinations carefully when advising learners. Centres will need to ensure that learners have access to a full range of information, advice and guidance in order to support them in making the necessary qualification and unit choices. When learners are recruited, centres need to give them accurate information on the title and focus of the qualification for which they are studying.

All learners must be registered with QUALIFI within 30 days of centre registration.

3.3 Entry Criteria

The qualification has been designed to be accessible without artificial barriers that restrict access and progression. Entry to the qualifications will be through centre interview and learners will be expected to hold the following:

- Bachelor's in engineering degree or;
- Master's in engineering degree or;
- Degree/Diploma in chemical, instrumentation, mechanical or relevant process safety discipline
- A minimum of 3 years' work experience which demonstrates current and relevant industry knowledge.

In certain circumstances, individuals with considerable experience but no formal qualifications may be considered, subject to interview and being able to demonstrate their ability to cope with the demands of the programme.

4 Structure of the Qualification

4.1 Units, Credits and Total Qualification Time (TQT)

The QUALIFI Diploma in Occupational Process Safety Management is a Level 7 qualification with 4 mandatory units, 60 credits and 600 TQT.

These units have been designed from a learning time perspective and are expressed in terms of Total Qualification Time (TQT). TQT is an estimate of the total amount of time that could reasonably be expected to be required for a learner to achieve and demonstrate the achievement of the level of attainment necessary for the award of a Qualification. TQT includes undertaking each of the activities of Guided Learning, Directed Learning and Invigilated Assessment.

Examples of activities which can contribute to Total Qualification Time include:

- guided learning
- independent and unsupervised research/learning
- unsupervised compilation of a portfolio of work experience
- unsupervised e-learning
- unsupervised e-assessment
- unsupervised coursework
- watching a pre-recorded podcast or webinar
- unsupervised work-based learning.

Guided Learning Hours (GLH) are defined as the time when a tutor is present to give specific guidance towards the learning aim being studied on a programme. This definition includes lectures, tutorials and supervised study in, for example, open learning centres and learning workshops. Guided Learning includes any supervised assessment activity; this includes invigilated examination and observed assessment and observed work-based practice.

Some examples of activities which can contribute to Guided Learning include:

- classroom-based learning supervised by a tutor
- work-based learning supervised by a tutor
- live webinar or telephone tutorial with a tutor in real time
- e-learning supervised by a tutor in real time
- all forms of assessment which take place under the immediate guidance or supervision of a tutor or other appropriate provider of education or training, including where the assessment is competence-based and may be turned into a learning opportunity.

4.2 Qualification Structure

The **Qualifi Level 7 International Diploma in Process Safety Management** comprises four units in total. All units are mandatory, and all units cover a number of topics relating to learning outcomes.

Unit Reference	Mandatory Units	Level	TQT	Credits	GLH
D/618/7616	Process Safety Management Systems	7	150	15	50
H/618/7617	Risk Based Process Safety	7	150	15	50
K/618/7618	Process Safety Culture and Human Factors	7	150	15	50
J/506/9064	Development as a Strategic Manager	7	150	15	60

4.3 Progression and Links to other QUALIFI Programmes

Learners completing the QUALIFI Level 7 International Diploma in Process Safety Management can progress to:

- a QUALIFI Level 7 Diploma;
- directly into employment in an associated profession.

4.4 Recognition of Prior Learning

Recognition of Prior Learning (RPL) is a method of assessment (leading to the award of credit) that considers whether learners can demonstrate that they can meet the assessment requirements for a unit through knowledge, understanding or skills they already possess, and so do not need to develop through a course of learning.

QUALIFI encourages centres to recognise learners' previous achievements and experiences whether at work, home or at leisure, as well as in the classroom. RPL provides a route for the recognition of the achievements resulting from continuous learning. RPL enables recognition of achievement from a range of activities using any valid assessment methodology. Provided that the assessment requirements of a given unit or qualification have been met, the use of RPL is acceptable for accrediting a unit, units or a whole qualification.

Evidence of learning must be valid and reliable. For full guidance on RPL please refer to QUALIFI's policy document on RPL.

5 Guidance to Teaching and Learning

To ensure consistency and quality of delivery amongst centres, QUALIFI has outlined a number of policies and procedures required to ensure the very best standards are available to learners. These include:

- expertise of staff
- learning and teaching methods
- study skills
- learning resources
- personal development planning
- career opportunities.

The policies and procedures are available on request to all accredited centres or to those wishing to apply for accreditation to deliver QUALIFI qualifications.

6 Learner Support

Centres should continue to support learners and encourage appropriate behavior. To ensure consistency and quality of delivery amongst centres, QUALIFI has outlined a number of policies and procedures to ensure the very best standards are available to learners. These include:

- learners with disabilities
- health and safety
- conduct
- progression

The policies and procedures are available on request to all accredited centres or to those wishing to apply for accreditation to deliver QUALIFI qualifications.

6.1 Data Protection

All personal information obtained from learners and other sources in connection with studies will be held securely and will be used during the course and after they leave the course for a variety of purposes. These should be all explained during the enrolment process at the commencement of learner studies. If learners or centres would like a more detailed explanation of the partner and QUALIFI policies on the use and disclosure of personal information, please contact QUALIFI via email support@QUALIFI-international.com

7 Assessment

This qualification is vocational as can support a learner's career progression. To meet QUALIFI's aim to provide an appropriate assessment method, each unit will be assessed through tasks that will be written in a way to make them realistic 'work-related' tasks wherever possible. Learners will need to demonstrate their knowledge, understanding, original thought, problem-solving and recommendations on actions will also be asked for where appropriate. Intellectual rigour will be expected that is appropriate to the level of the qualification.

Assignments will contain a question strand for each of the given unit's learning outcomes. The assignment tasks will address the LO (learning outcome) and AC (assessment criteria) requirements. Within assignments, there will always be requirements for learners to engage with important and relevant theory that underpins the subject area.

The assignment questions will require learners to draw on real organisations to illustrate their answers. Mature and part-time learners will ideally be able to draw on their personal work experience too.

Sample assessments and marking schemes are available on request as part of the Qualification Specification supplied to centres.

For further information please contact Qualifi.

8 Course Regulations

8.1 Course Requirements

Learners must complete all units and pass the appropriate mark to receive the full Certificate Award. QUALIFI will issue certificates to all successful learners through the registered centres.

8.2 Classification of Awards

This qualification is pass/fail.

Decisions about the overall achievements of awards are made by QUALIFI through the application of the academic and relevant course regulations. It is based on the Average Percentage Mark (APM) or, at the discretion of QUALIFI, on the basis of learners' overall profile and performance subject to the minimum requirements.

8.3 Learner Voice

Learners can play an important part in improving the quality of this course through the feedback they give. In addition to the ongoing discussion with the course team throughout the year, there is a range of mechanisms for learners to feed back about their experience of teaching and learning.

8.4 Complaints

QUALIFI recognises that there may be occasions when learners and centres have cause for complaint about the service received. When this happens, the complaints procedure is intended to provide an accessible, fair and straightforward system that ensures as an effective, prompt and appropriate response as possible.

For more information on our formal complaints procedure please contact in the first instance or email: support@QUALIFI-international.com

9 Equality and Diversity

QUALIFI recognises that discrimination and victimisation are unacceptable and that it is in the interests of QUALIFI employees to utilise the skills of the total workforce. It is our aim to ensure that no employee or other representative of QUALIFI receives less favourable facilities or treatment (either directly or indirectly) in recruitment or employment on grounds of age, disability, gender/gender reassignment, marriage/civil partnership, pregnancy/maternity, race, religion or belief, sex, or sexual orientation (protected characteristics).

Our aim is that our workforce will be truly representative of all sections of society and each employee feels respected and able to give their best. We oppose all forms of unlawful and unfair discrimination or victimisation. To that end the purpose of this policy is to provide equality and fairness for all. Our staff will not discriminate directly or indirectly, or harass customers or clients because of age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, and sexual orientation in the provision of QUALIFI's goods or services.

This policy and the associated arrangements shall operate in accordance with statutory requirements, particularly the Equality Act 2010 https://www.gov.uk/equality-act-2010-guidance. In addition, full account will be taken of any guidance or codes of practice issued by the Equality and Human Rights Commission, any government departments, and any other statutory bodies.

The policy document will be monitored and reviewed annually and can be downloaded from our website or by making contact with QUALIFI.

10 Further Professional Development and Training

QUALIFI supports UK and international customers with training related to our qualifications. This support is available through a choice of training options offered through publications or through customised training at your centre.

The support we offer focuses on a range of issues including:

- o planning for the delivery of a new programme
- o planning for assessment and grading
- o developing effective assignments
- o building your team and teamwork skills
- o developing learner-centred learning and teaching approaches
- o building in effective and efficient quality assurance systems.

You can request customised training through your registered centre in the first instance. If you need to contact QUALIFI directly:

Our customer service number: +44(0)1158882323

Or email:

support@QUALIFIinternational.com

Website:

www.QUALIFI.net
www.QUALIFI-international.com

Appendix 1: Unit Descriptors

QUALIFI Level 7 International Diploma in Process Safety Management

Unit PSM701: Process Safety Management Systems

Unit code: D/618/7616
RQF level: 7

Unit Aim

This unit aims to provide learners with the knowledge of the Process Safety Management (PSM) framework for process industries. It focuses on PSM system legal requirements, performance, and management of change and audit compliance. It also assesses learner's knowledge about sustainability goals for process industries.

Learning Outcomes, Assessment Criteria

LO	Learning Outcomes: When awarded credit for this unit, a learner can:		Assessment Criteria: Assessment of this learning outcome will require a learner to demonstrate that they can:
1	Implement Process Safety Management System (PSM) framework.	1.1	Analyse the characteristics of Inherently Safer Designs (ISD) principles
		1.2	Develop a business case for implementing process safety management in industries
		1.3	Evaluate the importance and role of integrating process safety management (PSM) with business management systems
		1.4	Differentiate between process safety and occupational health and safety
		1.5	Implement a strategic framework for process safety management
		1.6	Develop an approach to apply process safety during the concept phase of a project life cycle using Inherently Safer Designs principles.
2	Measure the performance of the PSM system by applying leading, lagging metrics and Perform Compliance Audit of Process Safety Systems.	2.1	Develop a strategy for Process Safety Performance measurement
		2.2	Perform value gap analysis to improve an existing PSM system
		2.3	Analyse the leading, lagging, near-miss metrics at tier 1,2,3,4 layers using an incident triangle or pyramid
		2.4	Develop an audit framework for process safety management that is fit for purpose
		2.5	Analyse the factors leading to the failure of process safety management audit

3	Implement Management of Change (MOC) in Process Safety Management System (PSM).	3.1	Develop a framework that examines the failure modes of MOC systems that occur during system design, rollout, operation and monitoring
		3.2	Develop an implementation plan that integrates new (additional) elements into an existing PSM
		3.3	Develop a strategy that identifies the types of changes that do and do not require a Management of Change review
		3.4	Analyse the ways in which leadership can contribute to the effective implementation of management of change in PSM system
4	Review the regulatory and legal compliance of process safety systems and implement metrics that measure sustainability in the process safety area.	4.1	Analyse the requirements of relevant global process safety regulations in the UK, USA, European Union, and your country of work.
		4.2	Evaluate the ethical and legal responsibilities of a Safety Engineer in a process plant
		4.3	Develop a business case that incorporates process safety metrics in the sustainability goals of the organization
		4.4	Analyse the process safety metrics that measure the sustainability goals of the process industry
		4.5	Evaluate the ways in which leadership can contribute to achieving UN sustainability goals in the process safety area

Indicative Content

- Process safety management, process safety business case, process safety management benefits (LO1)
- Process safety and Occupational health and safety similarities (LO2)
- Process safety management framework, process safety management model, CCPS, OSHA, EPI, API (LO3)
- Inherently Safer Designs (ISD), concept phase (LO4),
- Process Safety Performance measurement, value gap analysis, leading, lagging, near miss metrics, process safety metrics (LO5)
- Management of Change (MOC), Failure modes of MOC systems, integrate new elements into an existing, effects of leadership (LO6)
- Audit of Process Safety Systems, OSHA Audit protocol US 29 CFR and ICheme audit protocol (LO7)
- Regulatory, Legal compliance in Process Safety, compliance standards (LO8)
- Process sustainability, sustainability metrics and goals (LO9)

Recommended Texts

- *https://www.aiche.org*
- *https://www.aiche.org/academy*
- *https://www.icheme.org*
- *https://www.lce.com*
- *https://www.osha.gov/process-safety-management*
- *https://www.hse.gov.uk/*
- *https://www.aiche.org/ccps/introduction-management-change*

- *Guidelines for Implementing Process Safety Management   ISBN-10: 111894948X ISBN-13: 978-1118949481*

- *Auditing Process Safety Management Systems*
  ISBN-10: 0470282355 ISBN-13: 978-0470282359

- *Process Safety Metrics*
  ISBN-10: 0470572124 ISBN-13: 978-0470572122

- *Asset Integrity Management*
  ISBN-10: 1119010144 ISBN-13: 978-1119010142

- *https://www.un.org/sustainabledevelopment/sustainable-development-goals/*

Unit PSM702: Risk Based Process Safety

Unit code:H/618/7617
RQF level: 7

Unit Aim

This unit aims to provide learners with the knowledge of risk-based process safety and the various elements comprising risk-based process design. It also assesses learners' knowledge of Hazop methods and quantification of risk measures.

Learning Outcomes, Assessment Criteria

LO	Learning Outcomes: When awarded credit for this unit, a learner can:		Assessment Criteria: Assessment of this learning outcome will require a learner to demonstrate that they can:
1	Apply HAZOP methods to process safety incidents.	1.1	Analyse the characteristics of the four pillars and 20 elements of risk-based process safety (RBPS) and their interaction.
		1.2	Evaluate the way in which bow tie analysis can reduce process safety risks
		1.3	Analyse the characteristics of the Swiss Cheese Incident Causation Model
		1.4	Develop an approach to perform Process Failure Mode and Effects Analysis that is fit for purpose
2	Quantify risk analysis measures in process safety industries.	2.1	Analyse Accident & Incident Investigation techniques
		2.2	Account for the different levels of analysis in incident investigation using an incident investigation triangle
		2.3	Evaluate the widely used process safety metrics in any process industry
3	Evaluate the operational considerations of process safety systems by analysing Mechanical and Asset Integrity, Layer of Protection Analysis (LOPA) and Piping and Instrumentation diagram.	3.1	Analyse the significance and role of Piping and Instrumentation Diagrams and the potential consequences of not maintaining their currency
		3.2	Analyse the layers of protection for process related hazards
		3.3	Evaluate the seven core attributes that are characteristics of an effective independent protection layer or IPL
		3.4	Analyse the phases of MI program development
		3.5	Evaluate the challenges in implementing Asset Integrity for process industries
		3.6	Develop a workflow diagram for Asset Management Process with MI considerations that is fit for purpose

LO	Learning Outcomes: When awarded credit for this unit, a learner can:		Assessment Criteria: Assessment of this learning outcome will require a learner to demonstrate that they can:
4	Evaluate the operational readiness of process safety systems by analysing Safety Integrity Levels, Emergency Relief Systems, Pre-Startup review and Hot work permits.	4.1	Determine the required safety integrity level for a safety-instrumented function.
		4.2	Determine the risk reduction factor (RRF) for a hazard that occurs every ten years, causing a major release of toxic fumes to occur once in 100 years.
		4.3	Analyse elements of emergency relief system design with an emphasis on DIERS methodology.
		4.4	Evaluate the challenges in developing and maintaining operating procedures
		4.5	Analyse the purpose of Pre -startup Safety Review (PSSR) in process industries and the role of training in the effective implementation of Pre-Startup Safety Review procedures
		4.6	Evaluate the role of an effective hot work programme as part of an overall PSM system
		4.7	Evaluate the concept of the conduct of operations in process industries
		4.8	Analyse the metrics that could be used to monitor the conduct of operations in PSM

Indicative Content

- Risk Based Process Safety, 20 elements of RBPS design (LO1)
- HAZOP methods, Bow Tie Analysis, Swiss Cheese Incident Causation Model, Failure Mode and Effects Analysis (LO2)
- Piping and Instrumentation diagram (LO3)
- Layer Of Protection Analysis (LOPA) (LO4)
- Safety Integrity Levels (SIL) (LO5)
- Mechanical Integrity program for process safety systems (LO6)
- Emergency Relief Systems, DIERS methodology (LO7)
- Operating Procedures (LO8)
- Pre-start up Safety/-Operational Readiness Review, training impact (LO9)
- Hot work permits framework (LO10)
- Conduct of Operations in Process Safety Management (LO11)
- Accident & Incident Investigation techniques (LO12)
- Asset Integrity of Process Safety Systems, Key Performance Indicators (LO13)
- Quantify risk analysis measures (LO14)

Recommended Texts

- https://www.aiche.org
- https://www.aiche.org/academy
- https://www.icheme.org
- https://www.lce.com
- https://www.iso.org/iso-31000-risk-management.html
- Investigating accidents and incidents – a workbook for employers, unions, safety representatives and safety professionals, HSG245, HSE Books
- Risk Based Process Safety ISBN-10: 0470165693 ISBN-13: 978-0470165690
- Conduct of Operations and Operational Discipline ISBN-10: 0470767715 ISBN-13: 978-0470767719
- Performing Effective Pre-Startup Safety Reviews ISBN-10: 0470134038 ISBN-13: 978-0470134030
- Initiating Events and Independent Protection Layers in Layer of Protection Analysis ISBN-10: 0470343850 ISBN-13: 978-0470343852
- Asset Integrity Management ISBN-10: 1119010144 ISBN-13: 978-1119010142

Unit PSM703: Process Safety Culture and Human Factors

Unit code:K/618/7618
RQF level: 7s

Unit Aim

This unit aims to provide learners with the knowledge of process safety culture, human factors and competence development. It focuses on the impact of leadership on safety culture, stakeholder outreach, workforce involvement, post-Covid stress, mental health and the impact of digitalization on process industries. It also assesses learners' knowledge on environmental protection.

Learning Outcomes, Assessment Criteria

LO	Learning Outcomes: When awarded credit for this unit, a learner can:		Assessment Criteria: Assessment of this learning outcome will require a learner to demonstrate that they can:
1	Evaluate process safety culture and human factor optimization techniques.	1.1	Correlate the process safety performance issues with safety culture factors
		1.2	Analyse safety culture degradation pathways in an organization
		1.3	Analyse the way in which employee engagement can lead to improvements in safety culture
		1.4	Analyse a major accident from leadership and cultural roots perspective
		1.5	Analyse the impact of weak process safety Leadership in an organization
		1.6	Evaluate human factors optimization techniques that reduce human error
2	Implement strategies that assess the mental health of workers, including post-Covid and the impact of digitalization in process industries.	2.1	Develop workplace strategies that assess the mental health of workers
		2.2	Evaluate the role of leadership in managing mental health of workers
		2.3	Analyse the impact on safety culture in the post-COVID-19 workplace
		2.4	Analyse the role of management in dealing with post-Covid stress in industries
		2.5	Evaluate the way in which Artificial Intelligence (AI), Industrial Internet of Things (IIoT), Machine Learning (ML) technologies can be leveraged in process industries
		2.6	Analyse the way in which advanced robotics and artificial intelligence could be detrimental to workers' mental health in a process industry

3	Develop a stakeholder outreach contractor management programme.	3.1	Develop a stakeholder outreach programme using RBPS guideline
		3.2	Evaluate the challenges in implementing a stakeholder outreach programme
		3.3	Evaluate the role and significance of stakeholder communication and consultation in a risk management process
		3.4	Develop a RACI (responsible, accountable, consulted and informed) matrix for a corporate pocess safety leadership team
		3.5	Analyse the elements of contractor safety management programme
		3.6	Evaluate the role of leadership in environmental protection and communication approaches to manage risk-based process safety
		3.7	Evaluate strategies to protect the environment in process industries
4	Implement a competence development framework.	4.1	Develop a process safety competence development framework
		4.2	Evaluate the impact of leadership on competence development
		4.3	Evaluate the impact of training on process safety performance
		4.4	Identify areas of activity in which workforce involvement can be leveraged to manage risk-based process safety more effectively

Indicative Content

- Safety Culture, Positive culture, Leadership Impact (LO1)
- Human factors, Optimization techniques, Human error, Culture factors, Performance (LO2)
- Mental Health of workers, psychological health, Digitalization Impact (LO3)
- Stakeholder Outreach program (LO4)
- Communication and consultation, Crisis Communication (LO5)
- RACI matrix, responsibilities, Process Safety Leadership (LO6)
- Competency development framework (LO7)
- Impact of training (LO8)
- Workforce Involvement plan (LO9)
- Contractors Safety Management program (LO10)
- Post Covid impact on Safety culture, Covid stress, Business Continuity, Operational Resilience (LO11)
- Digitalization in process industries, Artificial Intelligence, Robotics, Industrial Internet of Things (LO12)
- Environment protection in process industries (LO13)

Recommended Texts

- *https://www.aiche.org/academy*
- *https://www.icheme.org*
- *https://www.aiche.org/ccps*
- https://oilspilltaskforce.org
- https://www.researchgate.net
- https://www.workplacestrategiesformentalhealth.com
- *https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119519393.ch6*
- *Handbook of Mental Health in the Workplace Online ISBN: 9781452229386*
- *Reducing error and influencing behaviour* (HSG48), HSE Books, ISBN: 978-0-7176-2452-2
- *Involving your workforce in health and safety*, HSG263, HSE Books, ISBN: 978-0-7176-622

Unit 724: Development as a Strategic Manager

Unit code: J/506/9064 RQF

level: 7

Unit Aim

The unit aims to support organizational and self-awareness in learners. It provides a foundation for a self-critical and reflective approach to personal development to support the learner when operating at a strategic level. Wider context organisational and environmental factors are also considered as contributors to overall strategic success of the individual and the organisation.

Learning Outcomes and Assessment Criteria

Learning Outcomes: When awarded credit for this unit, a learner will be able to:		Assessment Criteria: Assessment of this learning outcome will require a learner to demonstrate that they can:
1. Identify personal skills to achieve strategic ambitions.	1.1	Critically analyse the strategic direction of the Organisation.
	1.2	Critically evaluate the strategic skills required of the leader operating in a complex environment to achieve personal and organisational strategic ambitions.
	1.3	Assess the relationship between existing, required and future skills to achieve strategic ambitions.
2. Manage personal leadership development to support achievement of strategic ambitions.	2.1	Critically discuss the opportunities to support leadership development.
	2.2	Design a personal development plan to direct leadership development in a complex Environment.
	2.3	Devise an implementation process to underpin the success of the development plan that can realise substantial changes in leadership style.
3. Evaluate the effectiveness of the leadership development plan.	3.1	Critically evaluate the achievement of outcomes of the plan against original objectives.
	3.2	Evaluate the impact of leadership style and the achievement of objectives on strategic ambitions in different organisational settings.
	3.3	Critically review and update the leadership development plan.

4. Advocate an employee welfare environment that supports organisational values.	4.1	Critically evaluate the impact of corporate commitment to employee welfare on strategic organisational objectives.
	4.2	Discuss how an employee welfare environment can affect achievement of strategic organisational objectives.
	4.3	Determine the influence of corporate commitment to employee welfare on the development of organisational values that will realise strategic ambitions.

Indicative Content

The indicative content for learners includes, but is not limited to, the following:

- Approaches to business strategy
- Old and new business models
- Strategy evolution
- Resource based approach to strategy
- Analysis of the environment
- Honey and Mumford learning styles
- Personal development and gap analysis including developing yourself
- Career anchors (Edgar Schein)
- Blanchard, Adair, Blake and Mouton Models on leadership and development
- Argyris' double loop learning
- Reddin's 3D and Belbin's team roles
- Skills competences and know-hows including core and distinctive competences
- Intellectual capital and balance score card methods
- Development of a personal development plan (PDP)
- Health and safety at work
- Erikson's Life Stage Theory
- Nudge Theory
- Psychological Contract
- Kirkpatrick's Learning Evaluation Model
- Erikson's Theory of Personal Development (1902 –1994)
- Developmental and Sponsorship Mentoring
- Formal and Informal Coaching.

Learners will further be introduced to, and encouraged to discuss, some of the management models, concepts and ideas that could be used to help them set departmental, project, team and their own objectives.

Core Text

Human resource management at work Marchington, M. and Wilkenson, A 2008

Suggested Resources

- The CIPD Employee Outlook report is based on a twice-yearly survey of over 2,000 UK employees conducted by YouGov on behalf of the Chartered Institute of Personnel and Development, well worth a general read
- Organisational Behavior, ARVINEN MUONDON and PERKINS, KOGANPAGE
- Human resource Management in a Business Context, KEW and STREDWICK, CIPD
- Strategy and human resource, BOXALL, P. and PURCELL, J. (2008) CIPD
- Learning and Development Talent, Jim STEWART and CLARE RIGG, CIPD
- Contemporary strategy analysis. 6th ed. GRANT, R. (2008), Blackwell.
- Exploring Corporate Strategy, JOHNSON and SCHOLES, PRENTICEHALL
- Strategic Management and Organisational Dynamics: The Challenge of Complexity to Ways of Thinking about Organisations. 6th ed. Stacey, R., (2011), Financial TimesPrentice