Param Qualifications Level7 International Diploma in Environmental and Sustainable Management

Specification (For Centres)

About Param Qualifications

Param Qualifications provides academic and vocational qualifications that are designed to meet international professional standards and industry needs. Our commitment to the creation and awarding of respected qualifications is based on maintaining high standards, consistency, and quality across all programmes.

Param Qualifications qualifications are developed to be accessible to all learners who are capable of achieving the required standards. We promote equality and diversity across every stage of the qualification process, ensuring learners are free from barriers that may restrict access or progression.

Centres delivering our qualifications are required to implement fair and transparent policies, provide appropriate learner support, and ensure that all assessment decisions are valid, reliable, and consistent. Param Qualifications also requires centres to recognise prior learning where relevant, enabling learners' previous knowledge, skills, and experience to be taken into account when accessing our qualifications.

Param Qualifications maintains a strong duty of care towards learners, employers, and partners by implementing robust quality assurance processes. These processes safeguard the outcome of assessments, support continuous improvement, and ensure that the qualifications remain relevant, credible, and aligned with current industry practices.

Supporting Diversity

Param Qualifications and its partners value individual differences and are committed to promoting equality, diversity, and inclusion. We aim to remove barriers to learning and ensure fair access for all learners regardless of age, gender, disability, religion, cultural background, or other characteristics.

Learner Voice

Learners are at the heart of Param Qualifications's quality improvement process. We actively encourage feedback to ensure that teaching, learning, and assessment remain effective, relevant, and responsive to learner needs.

Feedback is gathered through structured surveys, evaluations, and discussions between learners, tutors, and centre staff. This enables Param Qualifications to identify areas for enhancement, celebrate good practice, and continually raise standards.

By providing opportunities for learners to express their views and experiences, we ensure that every qualification reflects the expectations of those who study it and supports a positive and engaging learning journey.

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1. Introduction

1.1 Why Choose Param Qualifications?

Param Qualifications qualifications are designed to provide learners with advanced opportunities for professional and academic development. They support learners in realising their full potential and achieving clear career objectives, including:

- Offering career pathways for learners who wish to develop expertise in environmental and sustainability management.
- Enhancing understanding of organisational, environmental, and social systems and how they can be managed for sustainable outcomes.
- Developing advanced skills and professional abilities to support progression into senior roles.

This qualification provides a rich blend of academic knowledge and applied skills. Learners will gain insight into how organisations respond to environmental challenges, the objectives of sustainability frameworks, and the impact of external global forces on strategic decision-making. The fast-changing and complex business environment, combined with increasing demand for sustainable practices, will be explored in depth.

Learners completing this qualification will develop the ability to:

- Apply advanced analytical and evaluative techniques in environmental and sustainability contexts.
- Investigate organisational, environmental, and global sustainability issues and opportunities.
- Critically assess strategies that balance economic, social, and environmental priorities.
- Apply management and sustainability practices in creative and practical ways.
- Use information from diverse sources to support strategic decision-making.
- Encourage problem-solving and innovation in addressing environmental challenges.
- Exercise judgement and accountability in leading sustainability initiatives.
- Reflect on personal learning and enhance transferable skills for professional advancement.

1.2 Employer Support for the Qualification Development

This qualification has been designed in consultation with employers, industry professionals, and academic specialists. Feedback from these stakeholders was used to shape the qualification content, ensuring that it reflects real-world practices, global sustainability priorities, and professional expectations.

The outcome is a programme that provides learners with both practical and academic value, equipping them with a recognised set of skills and competencies that are relevant across multiple industries and sectors.

1.3 Qualification Title

The title of this qualification is:

Param Qualifications Level 7 International Diploma in Environmental and Sustainable Management (ESM)

This title reflects the qualification's focus on environmental leadership, sustainability strategy, and organisational resilience. It signifies advanced study at Level 7, designed to prepare learners for senior roles in environmental management, corporate sustainability, and related professional areas. The qualification also provides a sound basis for further academic study or research in sustainability and environmental governance.

This qualification has been designed to meet **Condition A1** of Ofqual's General Conditions of Recognition. It ensures validity, reliability, comparability, manageability, and minimisation of bias in all aspects of delivery and assessment.

1.4 Awarding Organisation

Param Qualifications Ltd is responsible for the design, quality assurance, and certification of this qualification.

2. Qualification Purpose, Rationale, Aims and Outcomes

2.1 Qualification Purpose

The Level 7 International Diploma in Environmental and Sustainable Management is designed for aspiring sustainability and environmental professionals. It is aimed at learners who are responsible for developing and applying environmental and sustainability strategies within their organisations. Typical candidates may be managers or specialists seeking to expand their knowledge and skills to support progression into senior roles.

The Diploma equips learners with the expertise required to pursue careers as environmental and sustainability managers, consultants, or leaders. It also provides a sound basis for further academic progression, including postgraduate study in related disciplines.

Centres and learners are encouraged to use this programme as an opportunity to develop new and relevant skills, knowledge, and professional behaviours. The qualification supports both academic and career development, helping learners to realise their potential while contributing positively to organisational and societal sustainability.

The purpose of this qualification is aligned to the RQF Level 7 descriptors. Learners will develop highly specialised, advanced knowledge with critical awareness of current problems and new insights, as well as the ability to apply originality in problem-solving and decision-making within complex and unpredictable contexts.

2.2 Rationale for the Diploma

The rationale of the programme is to provide a clear career pathway for learners who wish to build professional competence in environmental and sustainability management. The Diploma enables learners to gain knowledge, skills, and confidence that are increasingly demanded by organisations globally.

This qualification will:

- Prepare learners for employment in environmental and sustainability roles.
- Support progression across a range of occupational functions.

It is suitable for both part-time learners already in employment and full-time learners seeking to enter the profession. Learners may also participate in work placements or projects to apply learning in practice.

2.3 Overall Aims of the Diploma

The Level 7 International Diploma in Environmental and Sustainable Management requires learners to critically evaluate a wide range of sustainability frameworks, risk assessment techniques, and climate change adaptation strategies. Learners will explore the influence of globalisation, environmental pressures, and ethical governance on organisational practice.

By analysing and critiquing sustainability implementation standards, learners will examine how different disciplines affect an organisation's environmental, social, and governance (ESG) strategy, its long-term success, and its ability to operate responsibly.

The qualification requires learners to demonstrate advanced executive skills including problem solving, critical research, and analytical evaluation. It also enables learners to engage with the complexities of leadership and strategic management, and to build the capacity to lead change in organisations.

The Param Qualifications Level 7 International Diploma in Environmental and Sustainable Management aims to provide learners with the opportunity to:

- Gain a recognised international qualification from a professional awarding body.
- Study a curriculum informed by the latest developments in sustainability and business practice.
- Develop practical knowledge and skills that can be applied immediately in the workplace.
- Progress to senior management positions through personal and professional growth.
- Have assessments reviewed and moderated by experienced professionals from relevant fields.
- Advance towards higher-level academic qualifications or research pathways.

2.4 Learning Outcomes

The overall learning outcomes of the Diploma are to enable learners to:

- Critically evaluate and apply different frameworks and standards in environmental and sustainability management.
- Assess the role of environmental leadership and governance in managing sustainability risks.
- Review the influence of globalisation on an organisation's sustainability culture.
- Understand and apply principles of sustainable development in environmental practice.
- Analyse advanced problem-solving techniques for sustainability risk assessment.
- Manage strategic risks in organisational sustainability domains.
- Examine the circular economy and approaches to sustainable resource management.
- Evaluate climate change risks, mitigation approaches, and adaptation strategies.

These outcomes are aligned with the expectations of a Level 7 qualification. Unit-specific learning outcomes are detailed in Appendix 1 within the unit descriptors.

3. Delivering the Qualification

3.1 Quality Assurance Arrangements

All centres delivering this qualification must go through an approval process to be recognised as an approved centre. Centres must have suitably qualified and experienced tutors whose expertise and ability to support learners are critical to programme success. Centres must also commit to working with Param Qualifications and its team of quality reviewers. Continuing Professional Development (CPD) for tutors is required to maintain high standards.

Approved centres will be monitored by Param Qualifications External Quality Reviewers to ensure that learners are provided with appropriate learning opportunities and guidance. Reviewers will examine and discuss a centre's assessment plans, and their suitability will be agreed with the centre.

Param Qualifications's guidance on assessment, invigilation, plagiarism prevention, and academic integrity must be followed by all centres.

Trainer Requirements

- Trainers must be appropriately qualified and occupationally competent in environmental and sustainability management.
- A minimum of 4 years' professional experience in the field is required.
- Trainers must normally hold a Level 6 qualification (or equivalent) in Environmental and Sustainability Management.
- A Level 3 Award in Education and Training (or equivalent) is required.
- Trainers should hold professional membership with IEMA (Institute of Environmental Management and Assessment) or an equivalent recognised body.

Assessor/Examiner Requirements

- Assessors must be suitably qualified and occupationally competent in environmental and sustainability management.
- A minimum of 5 years' experience in the field is required.
- Assessors must normally hold a Level 7 qualification (or equivalent) in Environmental and Sustainability Management.
- A Level 3 Award in Education and Training (or equivalent) is required.
- Professional membership with IEMA (Full/Chartered Membership) or an equivalent recognised professional body is expected.

Internal Verifier/Moderator Requirements

- Internal Verifiers must be appropriately qualified and occupationally competent in environmental and sustainability management.
- A minimum of 4 years' experience in the subject area is required.
- Verifiers should hold or be working towards a Level 4 Award or Certificate in Internal Quality Assurance of Assessment Processes and Practice.
- Verifiers must demonstrate active CPD in sustainability, environmental management, or auditing/quality assurance to ensure their knowledge remains current.

Assessors must hold a recognised assessor qualification (such as CAVA or equivalent), Internal Quality Assurers must hold (or be working towards) a Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice, and External Quality Assurers will be standardised annually with CPD logged to ensure consistency across centres.

3.2 Access to Study

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

Learners should be issued with a Programme Handbook, a study timetable, and opportunities to meet with their personal tutor and fellow learners. Centres should carefully assess learners to ensure that they are enrolled on the most suitable qualification for their needs and career aspirations.

Centres must provide learners with access to a full range of information, advice, and guidance to support them in making informed choices about their studies. When learners are recruited, centres should provide clear and accurate information on the title, focus, and structure of the qualification.

All learners must be registered with Param Qualifications promptly following enrolment at the centre.

3.3 Entry Criteria

This qualification has been designed to be accessible without artificial barriers that restrict access or progression. Entry will normally be through centre interview, and learners will be expected to hold one of the following:

- A Level 6 qualification in a relevant sector (e.g., environmental management, sustainability, business, engineering, or related discipline); or
- A Bachelor's degree in a relevant field; or
- A Master's degree in a related discipline; or
- A minimum of 3 years' relevant managerial or professional work experience that demonstrates current industry knowledge.

In exceptional circumstances, individuals with significant professional experience but no formal qualifications may also be considered, subject to interview and their ability to demonstrate they can meet the demands of the programme.

4. Structure of the Qualification

4.1 Units, Credits and Total Qualification Time (TQT)

The Param Qualifications Level 7 International Diploma in Environmental and Sustainable Management is a qualification comprising 8 mandatory units, with a total value of 120 credits and a Total Qualification Time (TQT) of 1200 hours.

Each unit is designed with careful consideration of the learning time required, expressed through Total Qualification Time (TQT) and Guided Learning Hours (GLH).

Total Qualification Time (TQT) is an estimate of the overall amount of time a learner is expected to spend to achieve the learning outcomes at the required standard. TQT includes activities such as guided learning, directed learning, independent study, and assessment.

Examples of activities that contribute to TQT include:

- Guided learning sessions with a tutor
- Independent and unsupervised research or study
- Preparation and compilation of a portfolio of evidence
- Online learning or webinars undertaken independently
- Unsupervised assessments and coursework
- Engagement with pre-recorded lectures, podcasts, or learning materials
- Work-based learning activities undertaken without direct supervision

Guided Learning Hours (GLH) are defined as time during which a tutor or trainer is directly present to provide guidance or instruction towards the achievement of the learning outcomes. This includes classroom teaching, tutorials, webinars, workshops, and any supervised study or assessment activities.

Examples of activities that contribute to GLH include:

- Classroom-based learning under tutor supervision
- Work-based learning supervised by a tutor or trainer
- Live webinars or tutorials delivered in real time
- E-learning with active tutor facilitation
- Supervised assessments, including invigilated examinations, observed practice, and competency-based assessments

4.2 Qualification Structure

The Param Qualifications Level 7 International Diploma in Environmental and Sustainable Management comprises eight mandatory units. Each unit is designed to cover core aspects of sustainability leadership, environmental strategy, and organisational practice.

Unit Reference	Mandatory Units	Level	TQT	Credits	GLH
ESM701	Strategic Environmental Management and Policy Development	7	150	15	50
ESM702	Sustainable Resource Management and Circular Economy	7	150	15	50
ESM703	Environmental Risk Assessment and Regulatory Compliance	7	150	15	50
ESM704	Climate Change Mitigation and Carbon Management	7	150	15	50
ESM705	Corporate Social Responsibility and Ethical Environmental Practices	7	150	15	50
ESM706	Environmental Auditing, Reporting, and Performance Evaluation	7	150	15	50
ESM707	Leadership, Change Management, and Sustainability Culture	7	150	15	50
ESM708	Artificial Intelligence and Data Analytics in Environmental Management	7	150	15	50

- **Credits:** 120
- **TQT:** 1200
- **GLH:** 400

4.3 Progression and Links to Other Param Qualifications Programmes

Learners completing the Param Qualifications Level 7 International Diploma in Environmental and Sustainable Management will be well-prepared for both academic progression and professional advancement.

Successful learners may progress to:

- Further study through other Param Qualifications Level 7 International Diplomas in related management or sustainability fields.
- Postgraduate study such as Master's top-up programmes, research-based qualifications, or specialist sustainability courses.
- Direct entry into employment in senior roles within environmental management, corporate sustainability, policy development, and related professional areas.

This qualification has been designed to support flexible learner pathways, enabling learners to either continue their academic journey or apply their skills immediately in the workplace. Successful learners may also be eligible for professional recognition routes (e.g., IOSH, IIRSM, IChemE, IEMA), and may progress to academic top-up routes such as MSc or MBA programmes.

4.4 Recognition of Prior Learning (RPL)

Recognition of Prior Learning (RPL) is a method of assessment that considers whether learners can demonstrate achievement of the learning outcomes for a unit through knowledge, skills, or understanding they already possess. Where this can be evidenced, learners may not need to repeat the same learning through a formal course of study.

Param Qualifications encourages centres to recognise previous achievements and experiences, whether gained in the workplace, through training, voluntary activity, or informal learning, as well as in formal education. RPL provides a route to acknowledge the outcomes of lifelong learning.

A wide range of valid assessment methods may be used to support RPL. Where the assessment requirements for a unit or qualification have been fully met, credit may be awarded through RPL for part of, or for an entire unit.

All evidence submitted for RPL must be valid, reliable, sufficient, and authentic. For full guidance, centres should refer to Param Qualifications's policy on Recognition of Prior Learning.

5. Guidance to Teaching and Learning

To ensure consistency and quality of delivery across centres, Param Qualifications has set out a number of policies and procedures that underpin high standards of teaching and learning. These include:

- Ensuring the expertise and qualifications of staff delivering and assessing programmes.
- Adopting effective and engaging learning and teaching methods.
- Supporting learners in developing appropriate study skills for independent and advanced study.
- Providing access to suitable learning resources and materials.
- Encouraging structured personal development planning.
- Offering guidance on career opportunities and progression routes.

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

- learners with disabilities
- health, safety, environment and sustainability
- conduct
- progression
- weekly timetable/attendance requirements.

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

6. Data Protection

All personal information obtained from learners and other sources in connection with their studies will be held securely and treated as confidential. Information will be used during the programme of study and, where appropriate, after learners complete the course for purposes such as certification, progression, and quality assurance.

The purposes for which personal information is collected and processed should be clearly explained to learners during the enrolment process. Learners should also be informed of how their data will be used, stored, and shared in line with relevant data protection legislation.

For further details, centres should refer to Param Qualifications's Data Protection Policy.

7. Assessment

This qualification is vocational as can support a learner's career progression. To meet Param Qualifications'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. All assessments are designed to be fair, transparent, and accessible, with reasonable adjustments applied in line with the Equality Act 2010 and Param Qualifications' Equality & Diversity Policy.

For further information please contact Param Qualifications.

8. Course Regulations

8.1 Course Requirements

Learners must successfully complete all mandatory units and achieve the required standard to be awarded the full Diploma. Certificates will be issued to successful learners through registered centres.

8.2 Classification of Awards

This qualification is awarded on a Pass/Fail basis.
Decisions about overall achievement are made by Param Qualifications in line with its academic and qualification regulations. Judgements are based on learners' performance against the assessment criteria and may also consider the overall profile of achievement, subject to meeting minimum requirements.

8.3 Learner Voice

Learners play an important role in enhancing the quality of the qualification. Centres should provide opportunities for learners to give feedback on their learning and assessment experiences. Feedback may be collected through surveys, meetings, or other mechanisms, and will be used to inform continuous improvement.

8.4 Complaints

Param Qualifications recognises that there may be occasions when learners or centres have concerns about the service they receive. The complaints procedure is designed to provide an accessible, fair, and transparent process that ensures a prompt and appropriate response.

For more information on the complaints procedure, centres should refer to Param Qualifications's Complaints Policy.

9. Equality and Diversity

Param Qualifications is committed to promoting equality, diversity, and inclusion. We aim to ensure that no learner, employee, or representative of Param Qualifications is treated less favourably on the grounds of age, disability, gender, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.

We oppose all forms of unlawful or unfair discrimination and victimisation. Our goal is to create a culture where staff, learners, and partners feel respected, supported, and able to achieve their best.

This qualification is designed to meet the requirements of the Equality Act 2010 and ensures that learners are not disadvantaged by artificial barriers to entry, delivery, or assessment.

The policy will be monitored and reviewed annually.

10. Further Professional Development and Training

Param Qualifications supports both UK and international centres with training and professional development related to our qualifications. This support is available through publications, online resources, and customised training delivered at centres.

Support may include:

- Guidance on planning the delivery of new programmes.
- Support in assessment design and grading approaches.
- Developing effective assignments.
- Building staff capacity and teamwork skills.
- Implementing learner-centred teaching and learning approaches.
- Embedding efficient and effective quality assurance systems.
- Customised training can be requested through the registered centre in the first instance. Further details of professional development opportunities can be obtained from Param Qualifications's Centre Support Team.

11. RQF Level 7 Alignment Statement

This qualification is aligned to the descriptors for Level 7 of the Regulated Qualifications Framework (RQF). Learners will demonstrate advanced knowledge, originality in application, critical analysis, and decision-making in unpredictable contexts. Full mapping is provided in Annex A (RQF Level 7 Mapping Table).

Appendix 1: Unit Descriptors

PARAM QUALIFICATIONS Level 7 International Diploma in Environmental and Sustainable Management

Unit ESM701: Strategic Environmental Management and Policy Development

Unit code : ESM701
RQF level : 7

Unit Aim:

This unit develops learners' competence in planning, implementing, and evaluating strategic environmental management initiatives. It covers organisational environmental policies, sustainability objectives, regulatory compliance, and integration with corporate strategy. Learners will critically assess environmental challenges, devise actionable strategies, and align policy development with organisational and stakeholder goals to promote long-term sustainability.

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	Critically evaluate strategic environmental management principles.	1.1	Explain the key principles and objectives of strategic environmental management.
		1.2	Critically analyse the relationship between organisational sustainability goals and environmental strategy.
		1.3	Evaluate the influence of leadership, culture, and stakeholder engagement on environmental management.
		1.4	Assess international frameworks and standards for environmental management (e.g., ISO 14001, EMAS).
		1.5	Critically review case studies demonstrating effective environmental policy implementation.
		1.6	Evaluate emerging challenges and trends in strategic environmental management.
2	Design and implement environmental strategies and policies.	2.1	Develop environmental policies aligned with organisational goals and sustainability principles.
		2.2	Critically evaluate tools for environmental impact assessment and performance measurement.
		2.3	Apply planning and implementation techniques for strategic environmental initiatives.
		2.4	Assess stakeholder roles and communication strategies in policy deployment.
		2.5	Recommend strategies for continuous improvement and organisational learning in environmental management.

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:
3	Analyse regulatory, ethical, and organisational requirements.	3.1	Critically evaluate environmental legislation, compliance obligations, and corporate responsibilities.
		3.2	Assess ethical considerations in environmental decision-making and policy development.
		3.3	Analyse organisational accountability, reporting, and governance mechanisms for environmental performance.
4	Integrate strategic environmental management into organisational performance.	4.1	Critically assess methods for monitoring, auditing, and evaluating environmental performance.
		4.2	Analyse the role of data, digital tools, and reporting systems in supporting environmental management.
		4.3	Recommend strategies for embedding environmental policies into organisational culture and business continuity.
		4.4	Evaluate approaches for aligning environmental performance with corporate social responsibility and sustainability objectives.

Indicative Content

- Principles and objectives of strategic environmental management.
- International frameworks and standards: ISO 14001, EMAS, global benchmarks.
- Leadership, organisational culture, and stakeholder engagement in environmental strategy.
- Environmental impact assessment, lifecycle analysis, and performance measurement tools.
- Case studies of effective environmental policy implementation.
- Ethical and regulatory considerations in environmental management.
- Governance and accountability mechanisms for environmental performance.
- Monitoring, auditing, and continuous improvement systems.
- Integration of environmental strategy with CSR and corporate sustainability.
- Emerging challenges and trends in environmental policy and strategy.

Recommended Texts and Resources

- ISO 14001 Environmental Management Systems – Guidance standards.
- European Commission: Eco-Management and Audit Scheme (EMAS).
- Epstein, M. J., & Buhovac, A. R. (2014). *Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts.*
- Hopwood, B., Mellor, M., & O'Brien, G. (2005). *Sustainable Development: Mapping Different Approaches.*
- United Nations Sustainable Development Goals (https://sdgs.un.org/goals).
- Institute of Environmental Management and Assessment (IEMA) resources.
- UK Government: Environmental reporting guidelines.

Unit ESM702: Sustainable Resource Management and Circular Economy

Unit code : ESM702
RQF level : 7

Unit Aim:

This unit develops advanced knowledge and critical understanding of sustainable resource management and circular economy practices. Learners will evaluate frameworks for efficient natural resource use, waste reduction, and recycling. The unit also examines how circular economy principles can be embedded within organisations, supply chains, and policy, while addressing challenges, trade-offs, and future innovations for global sustainability.

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	Critically evaluate principles of sustainable resource management.	1.1	Analyse global trends and pressures on natural resource use.
		1.2	Critically assess environmental, social, and economic impacts of unsustainable consumption.
		1.3	Evaluate frameworks and standards for sustainable resource management.
		1.4	Assess strategies for reducing waste and improving efficiency.
		1.5	Critically review tools and indicators for measuring resource sustainability.
		1.6	Examine the role of renewable and alternative resources in sustainability transitions.
2	Apply circular economy principles in practice.	2.1	Explain the principles and models of circular economy.
		2.2	Critically assess business strategies incorporating circularity (reuse, recycling, remanufacturing).
		2.3	Apply life-cycle thinking to resource management decisions.
		2.4	Evaluate the role of innovation, technology, and digitalisation in enabling circular practices.
		2.5	Critically analyse case studies of circular economy applications.

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:
3	Develop strategic approaches to sustainable and circular practices.	3.1	Design strategies for embedding circular economy principles into organisational systems.
		3.2	Evaluate trade-offs between economic, environmental, and social objectives.
		3.3	Recommend frameworks for integrating circular practices across supply chains.
		3.4	Assess organisational readiness for transition to sustainable resource management.
4	Critically evaluate challenges and future directions.	4.1	Analyse barriers and drivers of circular economy adoption.
		4.2	Critically assess the influence of policy, regulation, and international agreements.
		4.3	Evaluate ethical and social considerations of resource management strategies.
		4.4	Recommend innovations and emerging pathways for future sustainability.
		4.5	Critically reflect on the role of leadership in advancing sustainable and circular practices.

Indicative Content

- Global resource consumption patterns and sustainability challenges.
- Environmental, social, and economic impacts of unsustainable practices.
- Frameworks and standards for sustainable resource management.
- Waste reduction, efficiency strategies, and zero-waste concepts.
- Principles and business models of the circular economy.
- Life-cycle thinking and assessment tools.
- Innovation, technology, and digitalisation in circular practices.
- Case studies of successful circular economy applications.
- Trade-offs between economic, social, and environmental objectives.
- Policy, regulation, and international agreements influencing sustainability.
- Ethical and social implications of resource management.
- Future trends, innovations, and leadership roles in advancing circular practices.

Recommended Texts and Resources

- Ellen MacArthur Foundation: Circular Economy resources (https://ellenmacarthurfoundation.org).
- World Economic Forum (2020). *The Circular Economy Handbook.*
- OECD (2019). *Business Models for the Circular Economy.*
- McDonough, W., & Braungart, M. (2009). *Cradle to Cradle: Remaking the Way We Make Things.*
- Korhonen, J., Honkasalo, A., & Seppälä, J. (2018). "Circular Economy: The Concept and its Limitations" – *Ecological Economics*.
- United Nations Environment Programme (UNEP) – Resource Efficiency and Sustainable Consumption reports.
- Institute of Environmental Management and Assessment (IEMA) – Practitioner resources.

Unit ESM703: Environmental Risk Assessment and Regulatory Compliance

Unit code: ESM703
RQF level: 7

Unit Aim:

This unit develops advanced understanding of environmental risk assessment and the regulatory frameworks governing compliance. Learners will critically evaluate methods for identifying, analysing, and managing environmental risks, while applying national and international regulatory standards. The unit also equips learners to design compliance strategies, implement monitoring systems, and recommend improvements that align with sustainability objectives and legal obligations.

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	Critically evaluate principles of environmental risk assessment.	1.1	Explain the scope and importance of environmental risk assessment.
		1.2	Critically assess qualitative and quantitative risk assessment methodologies.
		1.3	Evaluate tools such as life-cycle assessment, risk matrices, and impact assessment models.
		1.4	Analyse the role of uncertainty and probability in environmental risk decision-making.
		1.5	Critically review case studies of environmental risk management.
		1.6	Evaluate emerging approaches in predictive environmental risk modelling.
2	Apply environmental risk management strategies.	2.1	Develop strategies for identifying and mitigating environmental risks.
		2.2	Critically assess the role of monitoring, measurement, and early warning systems.
		2.3	Evaluate integration of risk management with sustainability and organisational strategy.
		2.4	Assess stakeholder engagement and communication in environmental risk management.
		2.5	Recommend frameworks for proactive risk reduction in high-impact industries.

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:
3	Analyse legal and regulatory frameworks for environmental compliance.	3.1	Critically evaluate international, national, and local environmental laws and standards.
		3.2	Assess organisational responsibilities under key regulatory frameworks.
		3.3	Evaluate enforcement approaches and the role of regulators in ensuring compliance.
		3.4	Analyse the implications of non-compliance for organisational performance and reputation.
4	Integrate compliance and risk assessment into continual improvement.	4.1	Critically evaluate assurance systems for monitoring environmental compliance.
		4.2	Analyse the role of audits, reporting, and disclosure in compliance management.
		4.3	Evaluate the contribution of digital tools and AI to compliance monitoring.
		4.4	Recommend strategies for embedding compliance and risk management into organisational culture.
		4.5	Critically reflect on leadership responsibility in driving compliance and sustainability performance.

Indicative Content

- Principles, scope, and importance of environmental risk assessment.
- Qualitative and quantitative risk assessment methodologies.
- Tools: life-cycle assessment, risk matrices, environmental impact assessments.
- Probability, uncertainty, and predictive modelling in risk decision-making.
- Case studies of environmental risk management in high-impact industries.
- Strategies for risk identification, mitigation, and monitoring.
- Early warning systems, measurement, and continuous monitoring.
- Integration of environmental risk management with sustainability strategies.
- Stakeholder engagement and communication in risk management.
- International and national regulatory frameworks (e.g., EU Directives, US EPA, UK Environmental Permitting Regulations).
- Organisational responsibilities and corporate compliance obligations.
- Enforcement approaches, penalties, and role of regulators.
- Non-compliance risks: financial, reputational, and operational impacts.
- Assurance systems, audits, and environmental reporting frameworks.
- Role of digital tools, AI, and data analytics in compliance monitoring.
- Leadership responsibility and embedding compliance into organisational culture.

Recommended Texts and Resources

- UK Environment Agency: Environmental Permitting Guidance.
- European Commission: Environmental Impact Assessment Directive.
- US Environmental Protection Agency (EPA) – Risk Assessment Guidance.
- ISO 31000: Risk Management – Principles and Guidelines.
- ISO 14001: Environmental Management Systems.
- Pollard, S. J. T., et al. (2008). *Environmental Risk Assessment Handbook.*
- Glasson, J., Therivel, R., & Chadwick, A. (2012). *Introduction to Environmental Impact Assessment.*
- UNEP (United Nations Environment Programme) – Compliance and Enforcement Guidance.
- IEMA Practitioner Resources on Environmental Risk and Compliance.

Unit ESM704: Climate Change Mitigation and Carbon Management

Unit code: ESM704
RQF level: 7

Unit Aim:

This unit enables learners to critically evaluate strategies for mitigating climate change and managing carbon emissions. It explores scientific, technological, and policy-based approaches to reducing greenhouse gases, alongside organisational carbon management frameworks. Learners will analyse tools such as carbon footprinting, emissions trading, and offsetting, while also considering the ethical, economic, and social implications of climate action. The unit prepares learners to design effective strategies that align with international agreements and organisational sustainability goals.

Learning Outcomes and 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	Critically evaluate the science and drivers of climate change.	1.1	Explain the scientific basis and evidence for climate change.
		1.2	Critically assess global greenhouse gas emission trends and their impacts.
		1.3	Analyse the role of key sectors (energy, transport, industry, agriculture) in climate change.
		1.4	Evaluate the influence of international frameworks such as the Paris Agreement.
		1.5	Assess ethical and social justice considerations in climate change mitigation.
		1.6	Critically review case studies of climate adaptation and mitigation strategies.
2	Apply tools and methods for carbon management.	2.1	Critically evaluate carbon footprinting methodologies.
		2.2	Assess the role of emissions monitoring, reporting, and verification systems.
		2.3	Evaluate carbon reduction strategies including energy efficiency, renewable energy, and low-carbon technologies.
		2.4	Critically analyse market-based mechanisms such as carbon trading and offsetting.
		2.5	Recommend effective carbon management strategies for organisations.

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:
3	Analyse organisational and regulatory frameworks for carbon reduction.	3.1	Critically evaluate corporate carbon management frameworks and sustainability reporting.
		3.2	Assess national and international policies driving carbon reduction targets.
		3.3	Evaluate organisational responsibilities for Scope 1, 2, and 3 emissions.
		3.4	Analyse the challenges of regulatory compliance and carbon disclosure.
4	Design strategies for climate change mitigation and continual improvement.	4.1	Critically evaluate innovation and technology in accelerating low-carbon transitions.
		4.2	Assess stakeholder engagement in developing climate change mitigation strategies.
		4.3	Analyse the role of leadership in driving low-carbon organisational transformation.
		4.4	Recommend integrated strategies for long-term carbon neutrality and resilience.
		4.5	Critically reflect on continual improvement in climate change and carbon management practices.

Indicative Content

- Scientific evidence and drivers of climate change.
- Global greenhouse gas emission trends and sectoral contributions (energy, transport, agriculture, industry).
- International frameworks: Paris Agreement, Kyoto Protocol, IPCC guidelines.
- Ethical and social justice dimensions of climate change mitigation.
- Climate adaptation and mitigation strategies – global and local case studies.
- Carbon footprinting methodologies and emissions monitoring.
- Reporting and verification frameworks (e.g., GHG Protocol, CDP reporting).
- Carbon reduction strategies: renewable energy, energy efficiency, low-carbon technologies.
- Market-based approaches: carbon pricing, emissions trading schemes, carbon offsetting.
- Corporate carbon management frameworks and sustainability reporting.
- Scope 1, 2, and 3 emissions responsibilities.
- National and international policies driving carbon neutrality.
- Innovation and digital technologies in low-carbon transitions.
- Stakeholder engagement in climate action.
- Leadership and organisational transformation for carbon neutrality.
- Strategies for resilience and continual improvement in climate management.

Recommended Texts and Resources

- IPCC (Intergovernmental Panel on Climate Change) Reports.
- United Nations Framework Convention on Climate Change (UNFCCC).
- GHG Protocol Corporate Standard (World Resources Institute & WBCSD).
- CDP (Carbon Disclosure Project) reporting guidelines.
- Stern, N. (2007). *The Economics of Climate Change: The Stern Review.*
- Hoffman, A. J. (2015). *How Culture Shapes the Climate Change Debate.*
- Weart, S. R. (2008). *The Discovery of Global Warming.*
- European Commission: EU Emissions Trading System (EU ETS).
- UNEP (United Nations Environment Programme) – Climate Action resources.
- International Energy Agency (IEA) – Net Zero by 2050 Roadmap.

Unit ESM705: Corporate Social Responsibility and Ethical Environmental Practices

Unit Code: ESM705

RQF Level: 7

Unit Aim:

This unit enables learners to critically evaluate corporate social responsibility (CSR) frameworks and their application in promoting ethical environmental practices. It explores the integration of CSR into organisational governance, sustainability strategies, and stakeholder engagement. Learners will analyse ethical principles, global sustainability agendas, and practical approaches for embedding environmental and social responsibility into business operations. The unit prepares learners to design, implement, and evaluate CSR strategies that contribute to long-term organisational and societal sustainability.

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	Critically evaluate CSR frameworks and principles.	1.1	Explain the concept and evolution of CSR in relation to environmental sustainability.
		1.2	Critically evaluate major CSR frameworks (e.g., UN Global Compact, ISO 26000, GRI).
		1.3	Analyse the role of CSR in achieving the UN Sustainable Development Goals (SDGs).
		1.4	Evaluate stakeholder expectations and pressures influencing CSR practices.
		1.5	Critically assess case studies of CSR initiatives in environmental sustainability.
		1.6	Analyse limitations and criticisms of CSR frameworks.
2	Apply ethical principles to environmental practice.	2.1	Critically evaluate ethical theories and their application to environmental decision-making.
		2.2	Assess the responsibilities of organisations in addressing environmental and social justice issues.
		2.3	Evaluate transparency, accountability, and governance in ethical environmental practice.
		2.4	Analyse ethical dilemmas in balancing profit, people, and planet.
		2.5	Recommend strategies for embedding ethics into environmental sustainability programmes.

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:
3	Analyse organisational strategies for CSR and sustainability.	3.1	Critically evaluate integration of CSR into organisational policies and strategy.
		3.2	Assess CSR reporting and assurance practices.
		3.3	Evaluate the alignment of CSR with business performance and competitive advantage.
		3.4	Analyse the role of innovation and partnerships in advancing CSR objectives.
4	Recommend strategies for sustainable and ethical organisational practice.	4.1	Critically assess the role of leadership in embedding CSR and ethics into organisational culture.
		4.2	Evaluate methods for measuring and improving CSR performance.
		4.3	Analyse how CSR and ethical practices contribute to organisational resilience and reputation.
		4.4	Recommend integrated CSR strategies that support long-term environmental and social sustainability.
		4.5	Critically reflect on future trends in CSR and ethical environmental governance.

Indicative Content

- Concept and evolution of CSR in the context of environmental sustainability.
- Major CSR frameworks: UN Global Compact, ISO 26000, Global Reporting Initiative (GRI).
- CSR's role in achieving UN Sustainable Development Goals (SDGs).
- Stakeholder engagement, expectations, and pressures.
- Case studies of CSR initiatives in environmental sustainability.
- Ethical theories and principles in environmental decision-making.
- Organisational responsibilities for environmental and social justice.
- Transparency, accountability, and governance in CSR.
- Ethical dilemmas in balancing profit, people, and planet.
- Integration of CSR into corporate policies and strategy.
- CSR reporting and assurance mechanisms.
- CSR's contribution to business performance and competitive advantage.
- Role of innovation, partnerships, and collaboration in CSR.
- Leadership in embedding ethics and CSR within organisational culture.
- Measurement, evaluation, and continual improvement of CSR performance.
- Organisational resilience, reputation, and long-term sustainability.

Recommended Texts and Resources

- Carroll, A. B., & Brown, J. A. (2018). *Corporate Social Responsibility: A Review of Current Concepts, Research, and Issues.*
- Crane, A., Matten, D., Glozer, S., & Spence, L. J. (2019). *Business Ethics: Managing Corporate Citizenship and Sustainability in the Age of Globalization.*
- United Nations Global Compact (https://www.unglobalcompact.org).
- ISO 26000 Guidance on Social Responsibility.
- Global Reporting Initiative (GRI) Standards.
- Moon, J. (2014). *Corporate Social Responsibility: A Very Short Introduction.*
- UN Sustainable Development Goals (https://sdgs.un.org/goals).
- Institute of Business Ethics (IBE) – Practitioner resources.

Unit ESM706: Environmental Auditing, Reporting, and Performance Evaluation

Unit code: ESM706
RQF level: 7

Unit Aim:

This unit equips learners with advanced knowledge and practical skills to design, conduct, and evaluate environmental audits and reporting systems. It explores international standards, reporting frameworks, and performance evaluation methods. Learners will critically analyse the role of auditing and reporting in ensuring accountability, transparency, and continuous improvement of environmental performance. The unit also prepares learners to apply digital tools and emerging technologies in environmental monitoring and evaluation.

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	Critically evaluate principles and frameworks of environmental auditing.	1.1	Explain the objectives, scope, and types of environmental audits.
		1.2	Critically assess auditing standards such as ISO 14001 and ISO 19011.
		1.3	Evaluate risk-based approaches to environmental auditing.
		1.4	Analyse the role of independence, transparency, and accountability in audits.
		1.5	Critically review case studies of organisational environmental audits.
		1.6	Evaluate emerging approaches such as AI-driven and remote auditing.
2	Apply techniques for environmental reporting.	2.1	Critically evaluate frameworks for environmental reporting (e.g., GRI, CDP, integrated reporting).
		2.2	Assess the role of reporting in regulatory compliance and stakeholder communication.
		2.3	Evaluate data collection, validation, and assurance processes.
		2.4	Analyse the role of digital platforms and big data in environmental reporting.
		2.5	Recommend strategies for improving transparency and reliability in reporting.

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:
3	Evaluate methods for environmental performance assessment.	3.1	Critically assess performance indicators and metrics for environmental management.
		3.2	Evaluate benchmarking practices for measuring environmental performance.
		3.3	Analyse cost-benefit and life-cycle analysis as performance tools.
		3.4	Assess the use of sustainability scorecards and dashboards in performance monitoring.
4	Integrate auditing and performance evaluation into continual improvement.	4.1	Critically evaluate how audit outcomes drive organisational learning and improvement.
		4.2	Assess the role of leadership and culture in sustaining performance improvement.
		4.3	Analyse how audit and reporting findings inform risk management and strategy.
		4.4	Recommend strategies for embedding continuous improvement into environmental systems.
		4.5	Critically reflect on future trends in auditing, reporting, and performance evaluation.

Indicative Content

- Objectives, scope, and types of environmental audits (compliance, management systems, due diligence).
- International auditing standards: ISO 14001, ISO 19011.
- Risk-based approaches to environmental auditing.
- Principles of independence, transparency, and accountability in audits.
- Case studies of environmental audits in diverse sectors.
- Emerging approaches: AI-driven auditing, digital and remote auditing.
- Frameworks for environmental reporting: GRI Standards, CDP, Integrated Reporting.
- Reporting for regulatory compliance and stakeholder engagement.
- Data collection, validation, and third-party assurance.
- Role of digital platforms, big data, and blockchain in reporting.
- Environmental performance assessment metrics and KPIs.
- Benchmarking practices for environmental management.
- Cost-benefit analysis and life-cycle assessment.
- Sustainability scorecards, dashboards, and digital tools.
- Linking audit and reporting outcomes to risk management and strategy.
- Leadership, organisational culture, and continuous improvement.
- Future trends in auditing, reporting, and performance evaluation.

Recommended Texts and Resources

- ISO 14001: Environmental Management Systems – Requirements.
- ISO 19011: Guidelines for Auditing Management Systems.
- Global Reporting Initiative (GRI) Standards.
- Carbon Disclosure Project (CDP) Guidance.
- International Integrated Reporting Council (IIRC) Framework.
- Herzig, C., & Schaltegger, S. (2011). *Corporate Sustainability Reporting: Concepts and Cases.*
- Gray, R., Adams, C., & Owen, D. (2014). *Accountability, Social Responsibility, and Sustainability: Accounting for Society and the Environment.*
- KPMG (Annual). *Survey of Sustainability Reporting.*
- UNEP – Sustainability Reporting and Assurance Guidance.
- IEMA Practitioner resources on auditing and reporting.

Unit ESM707: Leadership, Change Management, and Sustainability Culture

Unit code: ESM707
RQF level: **7**

Unit Aim:

This unit develops advanced knowledge and skills in leadership, change management, and the creation of a sustainability-focused organisational culture. Learners will critically evaluate leadership approaches, stakeholder engagement, and change management models that support the transition towards sustainable practices. The unit equips learners to design strategies that embed sustainability into organisational culture, ensuring long-term resilience, innovation, and ethical responsibility.

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	Critically evaluate leadership approaches to sustainability.	1.1	Explain the role of leadership in advancing sustainability within organisations.
		1.2	Critically assess leadership theories and styles relevant to sustainability.
		1.3	Evaluate the impact of ethical and transformational leadership on sustainability outcomes.
		1.4	Analyse case studies of leaders driving sustainable organisational transformation.
		1.5	Critically reflect on personal leadership skills in the context of sustainability.
		1.6	Evaluate barriers to effective sustainability leadership.
2	Apply change management models to sustainability transitions.	2.1	Critically evaluate change management frameworks (e.g., Kotter, Lewin, ADKAR).
		2.2	Analyse how organisational readiness influences sustainability change programmes.
		2.3	Evaluate resistance to change and strategies for overcoming barriers.
		2.4	Assess the role of communication, training, and stakeholder alignment in driving change.
		2.5	Recommend integrated approaches to implementing sustainability change initiatives.

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:
3	Critically analyse the development of sustainability culture.	3.1	Evaluate the concept of sustainability culture and its organisational significance.
		3.2	Analyse how values, behaviours, and systems contribute to a sustainable culture.
		3.3	Critically assess the role of incentives, recognition, and employee engagement.
		3.4	Evaluate the influence of external stakeholders in shaping sustainability culture.
4	Design strategies to embed leadership, change, and culture in sustainability practice.	4.1	Critically assess governance structures that support sustainability culture.
		4.2	Evaluate leadership development programmes that enhance sustainability capability.
		4.3	Analyse how cross-functional collaboration supports sustainability transformation.
		4.4	Recommend strategies for embedding sustainability into organisational culture.
		4.5	Critically reflect on long-term challenges and opportunities in sustaining change.

Indicative Content

- Role of leadership in advancing sustainability.
- Leadership theories and styles: transformational, ethical, servant, adaptive.
- Case studies of leaders driving sustainable transformation.
- Barriers and enablers of effective sustainability leadership.
- Change management frameworks: Kotter's 8-Step Model, Lewin's Change Model, ADKAR.
- Organisational readiness and capacity for change.
- Resistance to change: drivers, challenges, and mitigation strategies.
- Communication, training, and stakeholder engagement in sustainability transitions.
- Concept and dimensions of sustainability culture.
- Influence of organisational values, behaviours, and systems.
- Role of incentives, recognition, and employee engagement.
- External stakeholder expectations shaping culture.
- Governance structures and accountability mechanisms for embedding sustainability.
- Integration of leadership, change management, and culture in long-term strategy.

Recommended Texts and Resources

- Kotter, J. P. (1996). *Leading Change.*
- Lewin, K. (1951). *Field Theory in Social Science.*
- Hiatt, J. (2006). *ADKAR: A Model for Change in Business, Government, and Our Community.*
- Schein, E. H. (2010). *Organizational Culture and Leadership.*
- Northouse, P. G. (2021). *Leadership: Theory and Practice.*
- Brown, K., & Brown, T. (2013). *Sustainable Leadership: Leading in a Changing World.*
- Harvard Business Review articles on leadership and change management in sustainability.
- IEMA resources on sustainability leadership and culture.
- UN Global Compact – Leadership for Sustainability guidance.

Unit ESM708: Artificial Intelligence and Data Analytics in Environmental Management

Unit code: ESM708
RQF level: 7

Unit Aim:

This unit provides learners with advanced knowledge of artificial intelligence (AI) and data analytics in environmental management. It explores how AI-driven tools, predictive analytics, and big data support monitoring, risk assessment, and decision-making for sustainability. Learners will critically evaluate applications such as remote sensing, IoT-enabled monitoring, and AI-based modelling, while also considering ethical, legal, and organisational implications. The unit equips learners to design strategies for integrating AI and analytics into environmental systems to achieve resilience, compliance, and continuous improvement.

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	Critically evaluate the role of AI and data analytics in environmental management.	1.1	Explain the principles of AI, machine learning, and big data in environmental applications.
		1.2	Critically assess the potential of AI for monitoring, prediction, and modelling of environmental impacts.
		1.3	Evaluate the use of predictive analytics in anticipating environmental risks and trends.
		1.4	Analyse organisational readiness and barriers to AI adoption.
		1.5	Critically review case studies of AI-enabled environmental management initiatives.
		1.6	Evaluate risks and limitations in applying AI to environmental systems.
2	Apply AI-driven methods and digital tools for monitoring and decision-making.	2.1	Evaluate applications of remote sensing, IoT sensors, and smart technologies in environmental monitoring.
		2.2	Assess the role of computer vision, drones, and satellite imagery in environmental analysis.
		2.3	Critically analyse integration of AI outputs with traditional environmental assessment methods.
		2.4	Apply data analytics tools to support carbon, waste, and resource management.
		2.5	Recommend AI-enabled strategies for proactive environmental decision-making.

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:
3	Analyse ethical, legal, and regulatory implications of AI in environmental systems.	3.1	Critically evaluate ethical issues including bias, transparency, and accountability in AI use.
		3.2	Assess data governance, privacy, and cybersecurity risks in environmental analytics.
		3.3	Evaluate compliance with national and international environmental standards in AI adoption.
		3.4	Analyse the social and organisational implications of digital transformation.
4	Integrate AI and analytics into continual improvement of environmental performance.	4.1	Critically assess how AI-generated insights support continuous environmental improvement.
		4.2	Evaluate the role of AI in auditing, reporting, and sustainability assurance.
		4.3	Analyse strategies for embedding AI and analytics into organisational environmental culture.
		4.4	Recommend frameworks for sustainable and ethical AI adoption in environmental management.
		4.5	Critically reflect on future innovations in AI and digital transformation for sustainability.

Indicative Content

- Principles of AI, machine learning, big data, and predictive analytics in environmental applications.
- AI for monitoring, prediction, and modelling of environmental risks and impacts.
- Predictive analytics for anticipating trends in climate, pollution, and resource use.
- Case studies of AI-enabled environmental management systems.
- Organisational readiness and barriers to digital transformation.
- Remote sensing, IoT sensors, and smart technologies in monitoring air, water, and soil quality.
- Use of drones, computer vision, and satellite imagery in environmental analysis.
- Integration of AI with traditional environmental risk assessment and impact evaluation.
- Applications of analytics for carbon, waste, and resource efficiency.
- Ethical considerations: bias, transparency, accountability in AI decision-making.
- Data governance, cybersecurity, and privacy in environmental analytics.
- Compliance with environmental regulations and international standards.
- Social and organisational implications of digital transformation in sustainability.
- AI-enabled auditing, reporting, and sustainability assurance.
- Embedding AI and data culture into organisations for continuous improvement.
- Future innovations: digital twins, blockchain, and advanced AI for sustainability.

Recommended Texts and Resources

- Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep Learning.* MIT Press.
- Russell, S., & Norvig, P. (2020). *Artificial Intelligence: A Modern Approach.*
- European Environment Agency – Reports on digitalisation and environmental monitoring.
- United Nations Environment Programme (UNEP) – *Frontiers Reports* on AI and emerging technologies.
- World Economic Forum (2021). *Harnessing Artificial Intelligence for the Earth.*
- Gartner & McKinsey research papers on AI in sustainability.
- International Telecommunication Union (ITU) – AI and IoT standards.
- Journal articles: *Environmental Modelling & Software*, *Sustainability Analytics*.
- IEMA digital transformation resources.
- Case studies from Ellen MacArthur Foundation and AI for Earth (Microsoft).