LEVEL 4 DIPLOMA IN COMPUTING

Online Course | Tutor is available to students | Qualification listed on OfQual website

44-7388826841

+44-203-608-0338

admissions@lspm.org.uk

Live chat, visit www.LSPM.org.uk

UK Provider Reference Number (UKPRN) : 10063255

Duration: 6 Months / 9 Months
Fees: GBP £1250 / GBP £950

Credits	Awarding body	Delivery mode
120	ATHE,UK	Online

Contents

Entry Requirements

This qualification is designed for learners who are typically aged 18 and above.

For learners who have recently been in education or training the entry profile is likely to include one of following:

- a GCE Advanced level profile with achievement in 2 or more subjects supported by 5 or more GCSEs at grades C and above other related level 3 subjects
- an Access to Higher Education Certificate delivered by an approved further education institute and validated by an Access Validating Agency
- other equivalent international qualifications

or

- Relevant work experience at managerial level

Learners must also have an appropriate standard of English to enable them to access relevant resources and complete the unit assignments.

.Introduction to Level 4 Diploma in Computing

The new qualification in Computing at Level 4 has been developed to conform to the requirements of the RQF, to meet the requirements of the sector.

This qualification provides the core knowledge, understanding and skills to support learners planning to further their studies in computing. It is equivalent to the first year of a degree programme in Computing. Learner may also progress from this qualification to employment in the sector.

Progression

On successful completion of a Level 4 qualification in Computing there are a number of progression opportunities.

Learners may progress to:

- a level 5 qualification such as the Level 5 Diploma in Computing
- employment in a computing and/or technology role at an appropriate level
- the second year of a degree programme

Level 4 Diploma in computing

The Level 4 Diploma in Computing is a 120 credit qualification. Learners must achieve 120 credits by completing all mandatory uni

Mandatory Unit	Level	Credit	GLH
IT and Society	4	12	48
Computer Systems and Software	4	12	48
Computer Programming Relational Database Systems	4	12	48
Software Engineering	4	12	48
Systems Analysis and Design	4	12	48
E-commerce Applications	4	12	48
Human Computer Interaction	4	12	48
Information Systems Theory and Practice	4	12	48
Management Information Systems	4	12	48

Unit Specifications

Unit Format
Each unit is presented in a standard format. This format provides guidance on the requirements of the unit for learners, tutors, assessors and external verifiers.

Each unit has the following sections:

Unit Title
The unit title reflects the content of the unit. The title of each unit completed will appear on a learner's statement of results.

Unit Aims
The unit aims section summarises the content of the unit.

Unit Code
Each unit is assigned a RQF unit code that appears with the unit title on the Register of Regulated Qualifications.

RQF Level
All units and qualifications in the RQF have a level assigned to them which represents the level of achievement. The level of each unit is informed by the RQF level descriptors.

Credit Value
The credit value is the number of credits that may be awarded to a learner for the successful achievement of the learning outcomes of a unit.

Learning Outcomes
The learning outcomes set out what a learner is expected to know, understand or be able to do as the result of the learning process.

Assessment Criteria
The assessment criteria describe the requirements a learner is expected to meet in order to demonstrate that the learning outcome has been achieved. Command verbs reflect the level of the qualification e.g. at level 4 you would see words such as analyses and evaluate

Unit Indicative Content
The unit indicative content section provides details of the range of subject material for the programme of learning for the unit.

IT and Society	
Unit Aims	Learners will understand ethical, legal and regulatory issues relating to IT. They will also understand the impact of IT on society.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand how IT has changed the way people live and work	1.1 Analyse significant developments in IT in the last 50 years 1.2 Evaluate how IT has changed society over the last 50 years 1.3 Explain how IT has changed the way people work in the last 50 years

Indicative Content

- Computers and society: Explaining digital citizenship, Community and the information age, Gender, Age, Culture.
- Impact of IT in society: Understanding the environment, Explaining the impact of the information age to social groups.
- IT induced changes for individuals: Everyday life, At home, At school, At the workplace

2. Understand IT issues in society	2.1 Explain the significance of digital citizenship to society 2.2 Explain the impact on individuals of living in the information age 2.3 Evaluate current issues in society relating to personal data

Indicative Content

- Social issues: Government role in information handling, Cultural diversity as a success factor for IT, regional and national perceptions of IT.
- Professional issues: Code of ethics, IT professional culture.
- Shaping the future developments: Internet penetration in everyday life, Smart devices, Social networks, Managing data and information.

3. Understand current legal, ethical and regulatory issues in IT	3.1 Evaluate current legal, ethical and regulatory issues in IT 3.2 Assess the importance of ethical guidelines in IT 3.3 Evaluate the impact of a current legal, ethical or regulatory issue in IT on a chosen organisation

Indicative Content

- Legal issues: IT related liabilities, Legislation relating to IT, Impact of legislation on systems development.
- Ethical issues: Dealing with personal data, Ethical systems design and development.
- Risks: Computer threats, Digital crime, Privacy, Security, Impact of e-everything (e.g. e-marketing, e-banking).

Computer Systems and Software	
Unit Aims	This unit will develop learners' understanding of the integration of hardware and software components. Learners will explore how hardware serves specific computer processing functions and investigate the use of various software applications.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for this unit. Additional guidance is provided on the ATHE sample assignment brief. Learners will design a computer system in line with the client brief and they will need to demonstrate advanced database skills during the implementation stage.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand components of computer systems	1.1 Describe components of different computer systems 1.2 Analyse networking infrastructures 1.3 Assess the function of components within a chosen computer system 1.4 Evaluate peripheral devices to meet different purposes

Indicative Content

- Computer components: defining a computer system, system component types
- Networking infrastructures: system connectivity, network types, hardware infrastructure, networking software
- Component functionality: processing, memory, system interfaces (input/output)
- Peripheral devices: limitations of computer systems, designing expandable systems, device types.

2. Understand computer software	2.1 Evaluate different operating systems explaining their role in managing resources 2.2 Critically assess the use of different software applications to meet specific purposes 2.3 Assess the use of web applications to enhance user experience 2.4 Assess the use of mobile applications to enhance user experience

Indicative Content

- Operating systems: the role of an operating system, OS types
- Software applications: the role of software applications, functionality and services supported by software, application types
- Web applications: the impact of the World Wide Web, architecture of web applications, web application types, web services
- Mobile applications: the role of mobile applications, interface issues, mobility issues, connectivity issues, security issues

Computer Programming	
Unit Aims	Learners will use different tools and techniques to design, implement and test programs, following the system life cycle. They will use an appropriate programming language and learn about the principles of good programming to enable them to create computer programs.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand principles of computer programming	1.1 Critically evaluate application programming interfaces (API) 1.2 Critically appraise the stages of the software development lifecycle 1.3 Explain the language constructs to be used within a programme

Indicative Content

- Application Programming Interface (API) evaluation: the need for API, API technologies, API evaluation criteria (security, functionality, usability)
- Software Development Life Cycle: SDLC importance, SDLC and programming
- Programming paradigms: Procedural programming, Functional programming, Object-oriented programming
- Programming language constructs: Variables, Constants, Operators, Loops, Conditional Statements

2. Be able to develop a computer program to a client brief	2.1 Design a computer program to meet a client brief using programming principles 2.2 Develop a computer program to an agreed client brief

Indicative Content

- Designing a computer programme: Using data models, The role of conceptual modelling, Algorithms, Pseudocode
- Developing a computer programme: Structuring a simple program

3. Be able to evaluate a computer program	3.1 Test a computer program that has been developed 3.2 Analyse test results against expected results to identify discrepancies 3.3 Make recommendations for improvements to a computer program before final release to a client

Indicative Content

- Testing a program: Testing programming practices, Testing data structures, Testing algorithm
- Analysing test results: Test reports, Verification, Validation
- Evaluating feedback: User evaluation, The role of software documentation, Dealing with integration, installation, deployment, updates
- Improving a program: Change requests, Scalability, Maintenance, Support

Relational Database Systems	
Unit Aims	This unit will develop learners' understanding of database systems and data analysis and modeling. They will understand how normal is action and functional dependency theory is used to design a relational database and how the client-server model is used.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand database management systems	1.1 Explain the database Management System (DBMS) 1.2 Explain the different levels of database architecture 1.3 Describe big data and how it applies to database management systems 1.4 Explain transaction processing within database management systems 1.5 Evaluate the importance of data integrity and quality control within a database management system

Indicative Content

- DBMS: DBMS overview, DBMS types,
- Database architectures: data models, data schemas, DBMS levels
- Big data: big data explained, big data management, applications of big data
- Transaction processing: concepts, transaction processing systems, OLTP, OLAP
- Data integrity: data quality management, quality control in DBMS, data integrity explained, data security

2. Understand database design	2.1 Explain relationships within a database 2.2 Explain the integrity constraints within relational models 2.3 Explain normal is action and functional dependency within a database 2.4 Explain database administration including integrity and security control

Indicative Content

- Database relationships: relationships, joins, keys
- Integrity constraints: referential integrity, domain integrity, entity integrity, foreign key integrity
- Functional dependencies: schema normal is action, normal forms
- Database administration: the role of the DBA, DBA skills and responsibilities

3. Be able to design a database system	3.1	Design a relational database to meet a specified design brief
	3.2	Explain how the design documents meet design brief
	3.3	Evaluate database design following feedback

Indicative Content

- Relational database design: design fundamentals, logical vs. physical design
- Database documentation: stakeholders for database documentation, documentation types
- Database evaluation: performance evaluation benchmarks, verification, validation

Software Engineering	
Unit Aims	Leaners will gain an understanding of the need for Software Engineering and the different methods and techniques.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand the software engineering approach to the design and development of software	1.1 Explain software engineering principles 1.2 Explain software engineering methods and techniques 1.3 Explain the modelling tools used for software development and engineering

Indicative Content

- Software engineering principles, Software development process, Software development management
- Traditional software development approaches, Software process modelling, Agile software development
- Software modelling, system interaction, system structure, system behaviour

2. Understand key aspects of software engineering	2.1 Explain software engineering practices 2.2 Evaluate the multidisciplinary nature of software development 2.3 Explain the structure of software engineering teams

Indicative Content

- Analysis tasks, Design tasks, Implementation tasks
- Software development and business information, Organisational aspects of system development
- Programming teams, Software engineering roles, Software engineering tasks

3. Be able to apply a software engineering approach to software and systems development	3.1 Apply a software engineering approach to software development for information management 3.2 Use software engineering methods in systems development 3.3 Explain the role of data verification and validation in systems development

Indicative Content

- Project management for software development, project planning, business process reengineering
- Data modelling, Object oriented analysis and design, Behavioural models
- Data verification, Data validation

Systems Analysis and Design	
Unit Aims	Learners will be able to understand the systems development life cycle and the role of systems methodologies within the life cycle. Learners will be introduced to different fact finding and problem solving techniques and they will use these to analyse an existing system. They will recommend improvements and plan to implement these improvements for a client.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand systems analysis and design	1.1 Explain the role of systems analysis and design in systems development 1.2 Critically analyse the systems development lifecycle 1.3 Explain how systems analysis can be influential in the redesign of a system 1.4 Evaluate different design methods and methodologies that can be used to analyse systems

Indicative Content

- Systems development lifecycle – Waterfall, V-shape, Spiral.
- Systems development methods: SSADM, DSDM, Agile, Prototyping
- Systems analysis – Requirements elicitation, Stakeholder analysis, Systems design process

2. Be able to use systems analysis and design techniques to recommend improvements to an existing system	2.1 Select methodology to analyse an existing system justifying choice 2.2 Use different information gathering techniques to review an existing system 2.3 Recommend improvements to an existing system

Indicative Content

- Information gathering techniques: interviews, observation, documentation investigation, surveys, focus groups.
- Business requirements: Using client briefs, Feasibility study, Analysis of system components.
- Design processes: Process specification, Data Flow Diagrams, Entity Relationship Diagrams, Using UML

3. Be able to develop a solution to improve an existing system	3.1	Present a solution to a client to improve an existing system, using an agreed format, justifying the proposed improvements
	3.2	Evaluate feedback from client on proposed solution and make amendments where appropriate

Indicative Content

- Present solution – Feasibility plan, Requirements elicitation
- Design specification: Process specification, Data Flow Diagram, Entity Relationship Diagram.
- Proposed solution: Implementation plan, Deployment plan, Post-implementation planning.

E-commerce Applications	
Unit Aims	Learners will learn about different e-commerce models and applications and how they can be used to develop e-commerce in a small business. They will research the stages involved in setting up e-commerce and they will use e-commerce applications to meet a client brief.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand principles of e-commerce	1.1 Explain e-commerce principles 1.2 Explain the relationship between e-commerce principles and e-commerce models

Indicative Content

- Stages: Understanding e-commerce concepts, Overview of the role of the Internet in commerce, Issues relating to the creation of e-commerce applications.
- Differences between ecommerce and e-business: E-business defined. Overview of e-business models, Benefits of e-commerce for businesses, E-commerce versus e-business.

2. Understand why small businesses use e-commerce	2.1 Examine the opportunities and benefits e-commerce offers a small business 2.2 Analyse the threats that a small business has to consider when adopting e-commerce 2.3 Explain solutions to threats to a small business when adopting e-commerce 2.4 Evaluate e-commerce strategies that have proven successful in small businesses

Indicative Content

- Opportunities and benefits: Impact of e-commerce on organisations, SMEs and e-commerce, Towards a global marketplace
- Threats: Identifying e-commerce threats, Risk assessment in e-commerce, Dealing with Internet threats, Infrastructure practices techniques and tools for dealing with e-commerce threats
- Ecommerce strategies – Developing an e-commerce strategy, Assessing e-commerce readiness, Measuring effectiveness of e-commerce solutions.

3. Understand e-commerce models used in small businesses	3.1 Evaluate e-commerce models that are appropriate for small businesses 3.2 Critically compare e-commerce revenue models that can be used by a small business

Indicative Content

- Ecommerce models: Modelling e-commerce transactions, Importance of e-commerce transaction models, Overview of e-commerce transaction models.
- Ecommerce revenue models: Creating online revenue, Historical evolution of e-commerce transactions, - Current and future e-commerce revenue models.
- E-marketing techniques: The role of the e- prefix in business sectors, E-marketing strategies, E-marketing models, E-marketing techniques and tools.

4. Understand e-commerce applications	4.1 Explain the effect of e-commerce applications on different types of organisations 4.2 Critically evaluate different applications that can be used to develop an e-commerce site

Indicative Content

- Ecommerce applications – Implementation strategies for e-commerce applications, Identifying e-commerce application requirements, Designing an e-commerce solution.

5. Be able create an e-commerce site using e-commerce application	5.1 Create an e-commerce site in line with industry standards 5.2 Create an e-commerce site in line with industry standards 5.3 Review feedback on e-commerce site 5.4 Present solution to client showing appropriate use of an e-commerce application

Indicative Content

- Create online presence: Defining an organisation's e-commerce offerings, Identifying target audience for e-commerce solutions, Implementing an e-commerce application design against a given client brief.
- Feedback: Evaluating e-commerce model, Evaluating e-commerce application solution, Evaluating e-commerce application use.
- Present solution – Deployment of e-commerce solutions, Integration with legacy systems, Maintenance and support of e-commerce applications, Catering for multiple platforms and different users.

Human Computer Interaction	
Unit Aims	Learners will develop understanding of principles and models of Human Computer Interaction (HCI). They will evaluate existing HCI design and principles and use this to help them plan their own prototype user interface. They will formulate design documentation to plan an interface for a product. Learners will implement the plan to create a prototype. Learners will review and amend the prototype based on user feedback.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for this unit. Additional guidance is provided on the ATHE sample assignment brief. Learners will design a relational database in line with the client brief and they will need to demonstrate advanced database skills during the implementation stage.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand principles of human computer interaction (HCI)	1.1 Evaluate principles of HCI 1.2 Critique interface design using the principles of HCI 1.3 Evaluate user interaction when using different IT applications

Indicative Content

- Cognitive and perceptual principles/laws: HCI origins, Perception and attention, Norman's theory of interaction, Hyck-Hyman response-selection law, Fitts' law
- User interface design rules: Designing universal user interfaces, Interfaces that support collaboration, Supporting different interaction styles, Complex interfaces, Schneiderman's eight golden rules, Nielsen's heuristics
- Interaction: HCI interaction styles, The interaction design process, User analysis, Evaluating interfaces against requirements

2. Be able to plan an interface for a specified application	2.1 Plan an interface for a specified application to meet a brief 2.2 Apply user interface design techniques to meet a brief 2.3 Justify planned use of HCI principles and techniques against industry standards

Indicative Content

- Plan: Storyboards, Navigation, Screen content
- Apply: Task centred user interface evaluation, Usability evaluation, Methods for evaluating user interfaces
- Justify: User interface specification, User interface fundamental principles, The role of user interface prototypes, User interface development process
- Conclude: User interface design basics, Best practices and principles in user interface design, Techniques for designing user interfaces

3. Be able to create a prototype using HCI principles	3.1 Generate a user interface for a specified product using planning documents 3.2 Critique user experience of a prototype user interface 3.3 Revise user interface in line with feedback

Indicative Content

- Generate: Identifying application requirements for user interface design, Selecting success criteria for user interface design, Aligning user interface components to user functionality
- Critique: Performing a usability evaluation of user interfaces, Testing visual components, Assessing interface structure and layout, Testing alternative navigation designs, Evaluating interface accessibility
- Revise: Performing cooperative evaluation of interface designs, Obtaining user feedback, Assessing interface design success

Information Systems Theory and Practice	
Unit Aims	Learners will understand the benefits of using information systems to plan a project. They will use an information system to plan and implement an information systems project.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief. Learners will find out about different information systems project management tools and techniques and use these to plan, implement and review their own information systems project.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand information systems used in organisations	1.1 Critically compare information systems used within different organisations 1.2 Evaluate an information system used in an organisation 1.3 Analyse the information systems needs of a chosen functional area within a business

Indicative Content

- Comparing information systems: IS scope, IS structure, IS functionality
- Evaluating information systems: IS success criteria, IS integration, IS deployment, IS use
- Information systems needs: user needs analysis, task needs analysis

2. Be able to plan the development of an information system	2.1 Prepare a detailed project plan for the development of information system 2.2 Assess the feasibility of a proposed information system 2.3 Explain the requirements of the proposed information system

Indicative Content

- Project plan: project management techniques, planning IS projects
- Feasibility planning: feasibility study, feasibility report
- Requirements elicitation: requirements capture, requirements analysis, requirements specification, requirements report

3. Be able to implement an information systems project	3.1 Implement an information systems project in line with an agreed project plan and project management method 3.2 Evaluate the implementation of an information system 3.3 Recommend improvements to the implemented information system

Indicative Content

- Implementing an IS project: project management stages
- Developing an information system: design, coding, testing, deployment
- Evaluating an information system: user evaluation, feedback mechanisms, testing
- Improving an information system: change requests, scalability, bug fixing, planned maintenance, support

Management Information Systems	
Unit Aims	Learners will investigate different management information systems and evaluate the common features. They will analyse an existing information system in use by an organisation. They will review records, observe performance and understand the legal and organisational requirements that apply to an information system. They will use their findings to recommend improvements to a management information system and they will present their findings to a client.
Unit Level	4
Guided Learning Hours	48
Credit Value	12
Unit Grading Structure	Pass
Assessment Guidance	To achieve this unit, learners must achieve the learning outcomes and meet the standards specified by the assessment criteria for the unit. Additional assessment guidance is provided on the ATHE sample assignment brief. Learners will design a management information system.

Learning Outcomes – The learner will:	**Assessment Criteria – The learner can:**
1. Understand management information systems in organizations	1.1 Analyse the use of data within an existing management information system 1.2 Evaluate different features of management information systems 1.3 Explain the importance of compliance with legal and organizational requirements when using a management information system 1.4 Evaluate links between information systems and competitive advantage

Indicative Content

- Different types of information – routine, exception, summary,
- Features of information system – common features information system, how support information system, common features computer systems, systems and application software, digital systems/applications
- Data security including storage – backup, archive, hack, ethical use of information, DPA etc.
- IS for competitive advantage: Enterprise Systems, Supply Chain Management, Customer Relationship Management, Knowledge Management Systems

2. Be able to evaluate a management information system in an organisation	2.1 Analyse how an organisation uses a management information system to improve performance 2.2 Evaluate the effectiveness of a management information system in an organisation

Indicative Content
• MIS and performance: managing assets and operations (equipment, software, networks, individuals, procedures, resources) • MIS effectiveness: impact of MIS, principles for effective information management

3. Be able to plan improvements to a management information system	3.1 Present recommendations to improve a management information system 3.2 Plan further system development to an information system

Indicative Content
• MIS improvements: studying people, studying technology, studying organizations • MIS extensions: process identification, process selection, assessment of current processes, process plan, process changes

Payment Plan

Please find below available fee payment plans:

6 Months - GBP £1250

● Payment option (a): GBP £416 x 3 monthly instalments
● Payment option (b): GBP £1187.50 x 1 instalment (We offer 5% bursary on total fee for students opting to pay in full)

9 Months - GBP £950

● Payment option (c): GBP £190 x 5 monthly instalments
● Payment option (d): GBP £475 x 2 quarterly instalments
● Payment option (e): GBP £902.50 x 1 instalment (We offer 5% bursary on total fee for students opting to pay in full)

APPLY NOW