



Level 7 Diploma in IT

Specification (For Centres)

February 2023

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About QUALIFI

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

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

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

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

Supporting Diversity

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

Learner Voice

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

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1. Introduction

1.1 Why Choose QUALIFI Qualifications?

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

These objectives are to:

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

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

Our qualifications will develop learners' abilities:

1. a sound knowledge of the information technology sector and the effective management of IT resources;
2. the ability to analyse the needs of business and to make recommendations for IT services and systems;
3. the ability to develop and implement innovations leading to a more efficient use of resources;
4. the ability to relate and communicate effectively with all personnel and stakeholders;
5. the motivation for continued learning and self-development to cope effectively with change;
6. an understanding of the regulatory and ethical frameworks of the IT sector.

1.2 Employer Support for the Qualification Development

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

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

1.3 Qualification Titles and Codes

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

QUALIFI Level 7 Diploma in IT 610/2170/2

1.4 Awarding Organisation

QUALIFI LTD

2 Qualification Aims and Learning Outcomes

2.1 Aims of the Diploma

This Diploma in Information Technology (IT) aims to develop learners' ability to solve complex applied computing problems in information technology. Learners will learn to manage IT projects and find out how information technology affects society. Further, it will also create the ability to design, plan and organise technology-based projects that are produced on time, to high standards and within budget.

3. Delivering the Qualification

3.1 Quality Assurance Arrangements

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

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

QUALIFI's guidance on invigilation, preventing plagiarism and collusion will apply to centres. QUALIFI Quality Reviewers/External Verifiers will monitor centre compliance. For assessment purposes, unless otherwise agreed, QUALIFI:

- sets and agrees assignments;
- moderates assignments;
- agrees the final mark and issues certificates.

Please contact Qualifi for further information.

3.2 Access to Study

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

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

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

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

3.3 Entry Criteria

The qualification has been designed to be accessible without artificial barriers that restrict access and progression. Entry to the qualification will be through a centre interview

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

In the case of applicants whose first language is not English, then IELTS 6 (or equivalent) is required. International qualifications will be checked for appropriate matriculation to UK higher education postgraduate programmes. Applicants are normally required to produce two supporting references, at least one of which should preferably be academic.

For this Level 7 Qualification, learners must meet one of the entry criteria below:

- Completion of a Bachelor's degree in IT.
- Completion of a level 6 qualification in a relevant discipline.
- 3 to 4 years' work experience in a related field.

Applicants must be aged 20 or over.

4 Structure of the Qualification

4.1 Units, Credits and Total Qualification Time (TQT)

The QUALIFI Level 7 Diploma in IT is made up of 120 credits.

The units have been designed from a learning time perspective and are expressed in terms of **Total Qualification Time (TQT)**. TQT is an estimate of the total amount of time that could reasonably be expected to be required for a learner to achieve and demonstrate the achievement of the level of attainment necessary for the award of a qualification. TQT includes undertaking each of the activities of guided learning, directed learning and invigilated assessment. 120 credits equate to 1200 hours of TQT.

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

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

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

Some examples of activities that can contribute to guided learning include:

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

4.2 Qualification Structure

QUALIFI Level 7 Diploma in IT

All units are mandatory. The qualification is 120 credits.

Unit Reference	Mandatory Units	Level	TQT	Credits	GLH
A/650/5650	Computer Networks	7	200	20	100
D/650/5651	Data Analytics	7	200	20	100
F/650/5652	Database Management Systems	7	200	20	100
H/650/5653	Management Information Systems	7	200	20	100
J/650/5654	Computers and Society	7	200	20	100
K/650/5655	Computing Projects	7	200	20	100
Totals			1200	120	600

4.3 Progression and Links to other QUALIFI Programmes

Completing the **QUALIFI Level 7 Diploma in IT** will allow learners to progress to:

- A Master's in the relevant discipline.
- Directly into employment in an associated profession.

4.4 Recognition of Prior Learning

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

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

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

5 Guidance to Teaching and Learning

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

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

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

6 Learner Support

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

- learners with disabilities;
- health and safety;
- conduct;
- progression;
- 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 QUALIFI qualifications.

6.1 Data Protection

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

7. Assessment

This qualification is vocational as it can support a learner's career progression. To meet QUALIFI's aim to provide an appropriate assessment method each unit will be assessed through tasks that will be written in a way to make them realistic 'work-related' tasks wherever possible. Learners will need to demonstrate knowledge, understanding and. Original thought, problem-solving and recommendations on actions will also be asked for from learners where appropriate for the unit. Intellectual rigour will be expected 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. To support this activity during the programme of learning, centres are required to make sure that they include case studies of relevant organisations and, wherever possible, facilitate in-company opportunities for learners to undertake research and investigation projects and/or support the organisation with various tasks. Mature and part-time learners will ideally be able to draw on their personal work experience too.

Sample assessments and marking scheme are available on request as part of the qualification specification supplied to centres.

Please contact Qualifi for more information.

8. Course Regulations

8.1 Course Requirements

All units will be assessed internally using a range of methods. Knowledge-based outcomes can be assessed using non-mandatory assessment tasks (provided in this specification for tutors' convenience). Skills-based outcomes must be achieved with reference to a real work environment and must include direct observation within the workplace.

8.2 Classification of Awards

These qualifications are pass/fail.

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

8.3. Learner Voice

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

8.4 Complaints

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

For more information, please contact in the first instance or email: support@QUALIFI-international.com

9 Equality and Diversity

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

Our aim is that our workforce will be truly representative of all sections of society and each employee feels respected and able to give their best. We oppose all forms of unlawful and unfair discrimination or victimisation. To that end the purpose of this policy is to provide equality and fairness for all.

Our staff will not discriminate directly or indirectly, or harass customers or clients because of age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, and sexual orientation in the provision of QUALIFI's goods or services.

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

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

10. Further Professional Development and Training

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

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

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

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

Our customer service number: +44 (0) 1158882323

Or email: support@QUALIFI-international.com

Website: www.QUALIFI.net www.QUALIFI-international.com

Appendices

Appendix 1: Unit Descriptors

Unit DIT701: Computer Networks

Unit Code	A/650/5650
RQF Level	7
Number of Credits	20
Total Qualifications Time	200
Guided Learning Hours (GLH)	100

**Unit
Aim**

**This
unit**

aims to develop learners' understanding of materials and networking technologies within the IT profession. This unit also sets learners on the route to understanding threats and vulnerabilities in physical and IT security and governance security. It also provides advanced knowledge of computer networking concepts including the detail level description about layered approaches.

Learning Outcomes and Assessment Criteria

Learning Outcomes	Assessment Criteria
When awarded credit for this unit, a learner will:	Assessment of this learning outcome will require a learner to demonstrate that they can:
1. Understand how computer networks are organised with the concept of layered approaches.	1.1 Analyse the models of data communication and computer networks 1.2 Analyse the different layers in hierarchical computer networks
2. Be able to apply and configure internet protocol (IP) addressing, static and dynamic routing and traffic control.	2.1 Set up IP addressing in a computer network. 2.2 Set up static and dynamic routing in a computer network. 2.3 Manage and control network traffic in a computer network. 2.4 Diagnose and fix network problems.
3. Understand the descriptions of the internet protocols of each layer.	3.1 Analyse delivery schemes, topologies and routing protocols in the network layer 3.2 Analyse Internet Protocols 4 and 6 in the network layer 3.3 Analyse the transmission control protocol (TCP), the user data protocol (UDP) and other relevant protocols in the transport layer 3.4 Analyse the functions and services of the session, presentation and application layers of the open systems interconnection (OSI) model
4. Understand the functionality of	4.1 Analyse the functions, services, and sub-layers of

data link layer.	the data link layer 4.2 Analyse error detection and correction in the data link layer 4.3 Analyse competing protocols in the data link layer 4.4 Analyse hardware components that operate at the data link layer
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Indicative Content

- Introduction to Networks
- Network protocols and communications
- Network Protocol Stack
- Addressing and Subnetting
- Network configuration and troubleshooting
- Data-link layer

Suggested Resources

William Stallings (2007) Data and Computer (8th Edition). Pearson Prentice Hall

Trivedi, B. (2013). Computer networks. New Delhi, India: Oxford University Press.

Gifford, C. (2016). Computer networks. London Wayland.

Manvi, S.S. and Vijayakumar, B.P. (2009). Computer networks. New Delhi India: Narosa Pub. House.

Gifford, C. (2016). Computer networks. London Wayland.

Unit DIT702: Data Analytics

Unit Code	D/650/5651
RQF Level	7
Number of credits	20
Total Qualification Time	200
Guided Learning Hours (GLH)	100

Unit Aim

The aim of this unit is to develop learners' abilities in advanced data analytics. It also aims to develop learners' ability to apply analytical figures that are used in employment to determine, clarify and disclose meaningful patterns of data to competitive advantage. Also, the aims include an appreciation of the use of statistics as a scientific way of handling information encountered in a wide variety of contexts in the business world and identify different types of data and data collection techniques.

Learning Outcomes, and Assessment Criteria

Learning Outcomes	Assessment Criteria
When awarded credit for this unit, a learner will:	Assessment of this learning outcome will require a learner to demonstrate that they can:
1. Understand the sources and characteristics of big data.	1.1 Analyse the concepts and sources of big data. 1.2 Evaluate recommendation systems, sentiment analysis and computational advertising. 1.3 Analyse big data types: streaming data, unstructured data, large textual data.
2. Understand the applications of big data and data processing pipelines.	2.1 Analyse the different techniques in data analytics. 2.2 Analyse the problems associated with large data sets used in applied analytical models.
3. Be able to assess the application of big data technologies for different usage scenarios	3.1 Evaluate approaches to visualize the output from an enforced analytical model. 3.2 Evaluate big data processing platforms and tools 3.3 Perform simple data processing tasks on a big data set, using tools that generate results from a large data set

Indicative Content

- Introduction to big data
- Applications of big data
- Working with different data types
- Data processing pipeline
- Introduction to data processing model and programming
 - MapReduce and Hadoop
 - Hadoop Distributed System (HDFS)
- Data processing using existing tools
 - Apache Mahout
 - NoSQL database
 - Mongo DB
 - Cassandra

Suggested Resources

Dietrich, D., Heller, B. and Yang, B. (2015). Data science & big data analytics: discovering, analysing, visualising and presenting data. Indianapolis, In: Wiley.

United States. Congress. Senate. Committee On Homeland Security and Governmental Affairs (2016). Fraud Reduction and Data Analytics Act of 2015

Shamanth Kumar, Huan Liu and Morstatter, F. (2014). Twitter data analytics. New York: Springer.

Jackson, S. (2016). Cult of analytics: data analytics for marketing. Abingdon, Oxon; New York, Ny: Routledge.

Unit DIT703: Database Management Systems

Unit Code	F/650/5652
RQF Level	7
Number of Credits	20
Total Qualification Time	200
Guided Learning Hours (GLH)	100

Unit Aim

Structured Query Language (SQL) is used to create, read, update and delete data. SQL predominantly deals with relational databases. Data scientists work with data and all the structured data is stored in databases. Therefore, knowledge of SQL is of utmost importance for a successful career as a data scientist. Specifically, the module aims to provide a strong foundation on relational database management systems and provide hands-on experience in the usage of SQL for data science and business analytics.

Learning Outcomes and Assessment Criteria

Learning Outcomes	Assessment Criteria
When awarded credit for this unit, a learner will:	Assessment of this learning outcome will require a learner to demonstrate that they can:
1. Understand the components of the entity-relationship (ER) model and how to convert from the ER model to the relational model.	1.1 Analyse the concepts and architecture of a relational database management system. 1.2 Analyse the components of an entity relationship model. 1.3 Analyse relation, record, field and keys in a relational model 1.4 Perform a conversion from an ER model to the relational model.
2. Understand the application of the concepts of functional dependency-preserving	2.1 Analyse the concepts of closure sets, closure operation, trivial, non-trivial, and semi trivial functional dependencies and equivalence, minimisation of functional dependency. 2.2 Analyse the concepts of lossless, attribute-preserving and functional-dependency-preserving decomposition and first normal form, second normal form, third normal form, Boyce Codd Normal Form (BCNF).

3. Be able to perform an installation of a programming language database and perform create, read, update, delete (CRUD) operations.	3.1 Install MySQL and phpMyAdmin and install Java and Python programming languages 3.2 Perform create, read, update, delete (CRUD) operations in MySQL.
4. Be able to perform database operations using MySQL.	4.1 Perform MySQL operations using CONCAT, SUBSTRING, REPLACE, REVERSE, CHAR LENGTH, UPPER, and LOWER commands. 4.2 Perform MySQL operations using count, group by, min, max, sum and average functions. 4.3 Perform MySQL operations using not equal, not like, greater than, less than, logical AND, logical OR, between, in, not in, and case statements functions. 4.4 Perform MySQL operations using cross join, inner join, left join, and right join commands to implement relationships between tables and extract data.

Indicative Content

- Introduction to ER model
- Introduction to relational model
- Functional dependencies
- Normal forms
- Relational algebra
- Installation of MySQL and performing CRUD operations
- String function, aggregate functions and logical operators using MySQL
- Joins using MySQL
- Introduction to phpMyAdmin

Suggested Resources

Ramez Elmasri, Shamkant B. Navathe, Fundamentals of Database Systems: Pearson publishing
Ward, P. (2008). Database management systems. London: Cengage Learning.
Goossens, P. (1982). Database Management Systems. Brussel: Koninklijke Bibliotheek Albert I.
Shneiderman, B. (1976). Database management systems. Montvale, N.J.: Afips Press.
Ramakrishnan, R. and Gehrke, J. (2011). Database management systems. Boston: McGraw-Hill.

Unit DIT704: Management Information Systems

Unit Code	H/650/5653
RQF Level	7
Number of Credits	20
Total Qualification Time	200
Guided Learning Hours (GLH)	100

Unit Aim

The objective of this module is to provide learners with an understanding of the business of managing the generation, formulation, dissemination, retention, storage, measurement, application, distribution, archival and disposal of corporate information using management information systems (MIS). The module will enable learners to understand the relevance and significance of process-oriented MIS for the 21st century.

Learning Outcomes and Assessment Criteria

Learning Outcomes	Assessment Criteria
When awarded credit for this unit, a learner will:	Assessment of this learning outcome will require a learner to demonstrate that they can:
1. Understand the objectives and applications of management information systems in modern organisations.	1.1 Analyse the historical development of databases in relation to the evolution of technological infrastructures. 1.2 Analyse the impact of the internet, the world-wide web, cloud computing and e-commerce on the modern organisation. 1.3 Analyse the characteristics and impact of a strategic management information system (MIS).
2. Understand the requirement to consider technological, ethical/social and international aspects of MIS in modern organisations.	2.1 Analyse the ways in which information systems can be used to support value-added change. 2.2 Analyse computer-based information systems, the functionality offered by information communication technology and its operational and strategic implications for management and the organisation. 2.3 Define the international, ethical and social problems of managing information systems in a modern organisation including

	enhanced decision-making.
3. Be able to evaluate the ways in which organisations build, manage and maintain MIS.	<p>3.1 Define the security and legislative issues relating to the building of management information systems.</p> <p>3.2 Define the security and legislative issues relating to the implementation of management information systems.</p> <p>3.3 Define the security and legislative issues relating to maintaining a management information system.</p>

Indicative Content

- Basics of MIS in organisations and links to strategy
- Global E-business and collaboration
- Ethics, social and international aspects of MIS
- Information technology infrastructure
- E-commerce: digital markets and digital goods
- Knowledge management and enhanced decision making
- Application of systems analysis and design principles

Suggested Resources

Gupta, C. and Jain, T.C. (2009). Management information system. New Delhi, India: Alfa Publications.

Mehta, V., Amrik Singh Sudan and Sudhir Dawra (2003). Management information system. New Delhi, India: Anmol Publications.

Turvill, I. (n.d.). A management information system.

Laudon, K.C. and Jane Price Laudon (2019). Essentials of management information systems. Harlow, England: Pearson.

Unit DIT705: Computers and Society

Unit Code	J/650/5654
RQF Level	7
Number of Credits	20
Total Qualification Time	200
Guided Learning Hours (GLH)	100

Unit Aim

Computers are a highly demanding area which links with multidisciplinary technologies including Cloud, Mobile, AI, IOT, Robotics, Data Science, Software development, Web Development, Networking etc. This unit assesses the social, ethical, legal and professional impact of computer technology. This unit also looks at developing strategies to mitigate those issues and develop ethical behaviour.

Learning Outcomes and Assessment Criteria

Learning Outcomes	Assessment Criteria
When awarded credit for this unit, a learner will:	Assessment of this learning outcome will require a learner to demonstrate that they can:
1. Understand the ethical, social, legal and professional issues related to the information technology industry.	1.1 Analyse common ethical concepts and theories in computing. 1.2 Analyse laws and social issues in areas including privacy, encryption and freedom of speech. 1.3 Analyse the laws relating to trade secrets, patents, copyright, fair use and restrictions, peer-to-peer protections and open source
2. Be able to evaluate and apply major ethical theories, legislations and codes of conduct.	2.1 Define data privacy and analyse the types of data included in data privacy. 2.2 Analyse philosophical perspectives such as utilitarianism versus deontological ethics and the basics of the U.S. legal system. 2.3 Apply ethical concepts and an analytical process to common dilemmas found in the information technology field. 2.4 Analyse the impacts of intellectual property theft and computer crime.
3. Understand the ethical issues in artificial intelligence (AI) and robotics.	431 Analyse the ethics in AI including autonomous vehicles and autonomous

	weapon systems 3.2 Analyse the ethics in robotics including robots in healthcare
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Indicative Content

- Ethical Theories
- Data and privacy
- Intellectual property
- Computer crime
- Cloud computing and big data
- Robots and ethics around robots
- Concerns related to AI
- Professional Ethics
- Legislations related to IT

Suggested Resources

Arnold, D.O. (1991). *Computers and society: impact!* New York; Montréal: Mitchell McGraw-Hill.

Rothman, S., Mosmann, C. and Science Research Associates (1976). *Computers and society. Instructor's guide.* Chicago; Henley-On-Thames: Science Research Associates.

Beardon, C. and Whitehouse, D. (1993). *Computers and society.* Oxford, England: Intellect Books.

Nikolaieff, G.A. (1970). *Computers and society.* New York: H.W. Wilson Co.

Herman T. Tavani, *Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing:* WILEY

Unit DIT706: Computing Projects

Unit Code	K/650/5655
RQF Level	7
Number of Credits	20
Total Qualification Time	200
Guided Learning Hours (GLH)	100

Unit Aim

The aim of this unit is to develop learners' understanding of how and why businesses develop e-commerce as an application of management strategies. This unit provides an opportunity for learners to apply concepts, methods and skills to develop applications to solve a real-world e-commerce problem.

Learning Outcomes and Assessment Criteria

Learning Outcomes	Assessment Criteria
When awarded credit for this unit, a learner will:	Assessment of this learning outcome will require a learner to demonstrate that they can:
1. Be able to analyse a software design problem and write a project proposal to fix it.	1.1 Analyse the technologies involved in building a secure e-commerce site. 1.2 Analyse the common problems faced by e-commerce sites. 1.3 Perform a requirements analysis and create a requirements specification document. 1.4 Write a project proposal and create a presentation that address the problem.
2. Be able to plan and design a front-end and back-end solution using modern software design techniques.	2.1 Analyse front-end development tools, frameworks and languages. 2.2 Analyse back-end development languages, frameworks and databases 2.3 Analyse the application of leading software development methodologies
3. Be able to implement the solution using modern software development technologies.	3.1 Create a project report and user documentation that conform with organisational guidelines. 3.2 Deliver structured presentations on the software solution that has been developed and the corresponding deliverables.

Indicative Content

- Project scope
- Problem Identification
- Design an E-commerce application
- Application Development
- Proposal Presentation
- Final report and VIVA

Suggested Resources

C Henry Edwards and Penney, D.E. (2000). Differential equations: computing and modelling: computing projects. Englewood Cliffs, N.J.: Prentice Hall.

Ionut Danaila (2011). An introduction to scientific computing: twelve computational projects solved with MATLAB. New York; London: Springer.

Glass, R.L. (1980). The second coming: more computing projects which failed. Seattle: Computing Trends.

Johann Rost and Glass, R.L. (2011). The dark side of software engineering: evil on computing projects. Hoboken, N.J.: John Wiley & Sons [For] Lee Computer Society.

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