

**'Becoming a knowledgeable IT practitioner'**

**The curriculum and assessment of students at this stage of education has been carefully designed to promote deep learning of Information Technology and develop students into knowledgeable IT practitioners:**

The BTEC National IT qualification is a practical course and provides information on how computers are used in different situations. In year 12, 2 of the 4 units are delivered. Creating IT systems to manage and share information will involve learning new skills in designing, creating and manipulating databases. This builds on the knowledge gained from component 2 of the BTEC Tech Award. For those students who studied Computer Science at KS4 this will build on the storing and searching data elements of the specification. Unit 3, social media in business is also delivered this year and contains entirely new concepts. Students who have studied GCSE Business will build on skills such as how to promote products to a target audience and meeting the needs of stakeholders. The course title is Pearson BTEC Level 3 National Extended Certificate in Information Technology and the QAN code is 601/7575/8.

**HALF TERM 1 DATABASES / SOCIAL MEDIA****All students will know:****Unit 2 Creating and managing databases**

- » Structure and purpose of databases.
- » Database terminology.
- » Data types.
- » Creating relational databases in Access including simple select queries, forms and reports.
- » Benefits of a relational database.

**Unit 3 Social Media**

- » A1 Social media websites (How developments affect the way businesses promote products.
- » How they support business aims and needs. Features of social media websites.).
- » A2 Business uses of social media (Types of content, focus and meaning, audiences, advertising, relationships.).
- » A3 Risks and issues (Types of comments, constraints, consequences, security.).

**All students will be assessed:**

- » AP1 HT1 Assessment of practical database tasks and theory using summative assessment paper.
- » Live assessment of practical tasks in lessons and Do It Now tasks.
- » HT1 social media theory assessment.

**Reading skills needed for this unit:**

- » Students will need to read scenarios and decompose tasks to identify and solve the requirements.

**Key vocabulary:**

Database, primary key, record, entity, data types, field, length, flat file, relational, query, table, report, interface, combo box, IsNotNull, Social media, Target Audience.

**HALF TERM 2 DATABASES/SOCIAL MEDIA****All students will know:****Unit 2 Creating and managing databases**

- » The purpose of normalisation and the main stages including documentation.
- » Database design standards.
- » Data validation and verification techniques in tables.
- » Types of queries.
- » Importing data.

**Unit 3 Social Media**

- » Revise A1, A2, A3 content and assessment structure.
- » Assignment 1 Social Media.

**All students will be assessed:**

- » AP2 HT2 database assessment to test. understanding of normalisation, ERDs and creating database structures.
- » Do Now tasks and live marking of lesson activities.
- » Summative assessment, students will submit assignment 1 for unit 3.

**Reading skills needed for this unit:**

- » Students will need to read scenarios and decompose tasks to identify and solve the requirements.

**Key vocabulary:**

Normalisation, validation, presence check, length, table lookup, value lookup, range check, type check, verification, select, make table, delete, action, calculate, import, macro.

### HALF TERM 3 DATABASES/SOCIAL MEDIA

#### All students will know:

#### Unit 2 Creating and managing databases

- » Complex forms and menu systems.
- » Calculations and validation in forms using macros and D functions.
- » Complex reports including calculations and sorts.
- » The basic structure of an assessment including analysis of Pearson exam scripts and templates.
- » Apply normalisation to sample scenarios.

#### Unit 3 Social Media

- » (B) Planning process.
- » (B) Business requirements.
- » (B) Content planning and publishing.
- » (B) Online communities.
- » (B) Social media policies.
- » (B) Reviewing and refining plans.

#### All students will be assessed:

HT3 database assessment to test normalisation, design and full implementation.

#### Reading skills needed for this unit:

- » Students will need to read scenarios and decompose tasks to identify and solve the requirements.

#### Key vocabulary:

Forms, input, macro, template, dmax, dsum, dcount, dmax, dmin, ascending, descending, sorts, calculate, reports, Target audience, content, dangers, unforeseen, constraints, viruses, blackmail, ransomware, sensitive.

### HALF TERM 4 DATABASES/SOCIAL MEDIA

#### All students will know:

#### Unit 2: Creating and managing databases

- » Test databases using a range of test types and how to document these tests.
- » How to evaluate the success of a database design.
- » Complete practice papers and scenarios using the specified Pearson templates.

#### Unit 3

- » (C) Accounts and creation.
- » (C) Content creation.
- » (C) Creating communities.
- » (C) Analysing Data.
- » (C) Skills knowledge and behaviours.

#### Unit 3 Assignment 2

- » Develop a plan to use social media.
- » Implement the use of social media.

#### All students will be assessed:

- » AP3 HT5 completion of mock exam.
- » Do Now tasks and live marking of lesson activities.
- » Summative assessment, students will work on unit 3 assignment 2 coursework.

#### Reading skills needed for this unit:

- » Comparing and contrasting the solution against criteria and drawing conclusions.

#### Key vocabulary:

Testing, extreme, erroneous, normal, boundary, evaluate, online community, client, targets, adwords, promotional, schedule.

### HALF TERM 5 DATABASES/SOCIAL MEDIA

#### All students will know:

#### Unit 2 Creating and managing databases.

- » Revision of the concepts taught by completing sample assessments. Each assessment is 5 hours.

#### Unit 3 Assignment 2 Social Media

- » Develop a plan to use social media.
- » Implement the use of social media.

#### All students will be assessed:

- » HT5 completion of the actual database exam.
- » Do Now tasks and live marking of lesson activities.
- » AP4 Summative assessment, students will submit assignment 2 for unit 3.

#### Reading skills needed for this unit:

- » Distinguishing the effect of a plan. Comparing and contrasting. Identify main points and ideas from the scenario.

#### Key vocabulary:

See previous half terms for database terminology, Evaluating, reviewing, comparing, justifying, interaction, audience, likes, shares, feedback, profiles, interpreting, adapting, publishing.

## HALF TERM 6 IT SYSTEMS: UNIT 1 (TOPIC A)

### All students will know:

#### Unit 1: Topic A

- » Digital Devices.
- » Peripheral Devices.
- » Software types.
- » File types.
- » Interfaces.
- » Factors affecting the choice of ICT systems.
- » Emerging technologies.

### Unit 3: Completing extensions/resubmissions All students will be assessed:

- » Summative assessment, students will be assessed using an exam paper on the content of learning aim A.
- » Formatively assess student books and answer to exam questions. Quizzes on the VLE.

### Reading skills needed for this unit:

- » Reading questions to identify the requirements of a question. Inference.

### Key vocabulary:

Input / Output, accessibility, command, GUI, menu, peripheral, laws.

## ENRICHMENT OPPORTUNITIES

External speaker to discuss databases in the industry. Speaker to discuss the use of social media and the impact that it can have on business. Students to investigate how the academy uses databases to manage student and staff data. There is also a government cybercrime extra-curricular programme available which students can use to improve their understanding of crime whilst developing their problem solving skills.

## HOW STUDENTS CAN BE SUPPORTED AT HOME

Students should use the revision guides that they have been given which covers the specification content. Tasks set on ClassCharts should be completed and submitted by the deadlines set.

Students have been provided with sample exam papers and solutions which should be used for revision. There are a wealth of resources and extended content for each topic which can be found by searching on YouTube.

## HOW THIS LEARNING WILL BE EMBEDDED ELSEWHERE IN THE CURRICULUM

The social media unit links with some of the concepts that are taught in business studies. This includes target audience, fitness for purpose, business requirements and aims and objectives. Students that have studied business at KS4 or are studying it at KS5 will benefit greatly from transferable content. There are some links to maths in the database unit where students are expected to use mathematical operators and functions.

# YEAR 13 | BTEC IT

## 'Becoming a knowledgeable IT practitioner'

The curriculum and assessment of students at this stage of education has been carefully designed to promote deep learning of Information Technology and develop students into knowledgeable IT practitioners:

The BTEC National IT qualification is a practical course and provides information on how computers are used in different situations.

In year 13, the final two units are delivered.

Information technology systems will involve developing knowledge of different systems and the factors that affect the choice of them. This builds on knowledge gained from component 2 of the BTEC Tech Award and GCSE Computer Science. Unit 5 involves students developing data models and analysing them which builds on the skills and knowledge gained from component 2 of the BTEC Tech Award. Students will develop skills through creating more complex data models. The course title is Pearson BTEC Level 3 National Extended Certificate in Information Technology and the QAN code is 601/7575/8.

## HALF TERM 1 IT SYSTEMS

### All students will know:

#### Unit 1 (Topic A) Revision.

- » Revision of digital devices, peripherals, software, file types, interfaces, choosing IT systems and emerging technologies.

#### Unit 1 (Topic B)

- » Connectivity.
- » Networks and factors affecting choice.
- » Data transmission and issues.
- » Codecs and compression.

#### Unit 1 (Topic C)

- » Online systems
- » Online communities.
- » Implications for individuals and organisations of using online systems and communities.

### All students will be assessed:

- » AP1 Summative assessment on learning aim A, B and C using standardised resources from PG Online and previous scripts.
- » Selected exam questions from previous papers.

### Reading skills needed for this unit:

- » Students will need to demonstrate a good level of reading comprehension. They will be reading lengthy questions and scenarios and will need to analyse this text and summarise the contents. They will require a good understanding of technical vocabulary to aid answers. They will also need to have a strong understanding of the vocabulary used by the exam board and have the ability to apply decomposition to questions.

### Key vocabulary:

Lossy / Lossless, LAN, WAN, VPN, Transmission, multifunction, performance, accessibility, single and multi-tasking, operating systems, applications, utility, open source proprietary, connectivity, compatibility.

## HALF TERM 2 IT SYSTEMS

### All students will know:

#### Unit 1 (Topic D: Protecting data and information)

- » Threats to data information and systems.
- » Protecting data.

#### Unit 1 (Topic E: Impact of IT systems)

- » Online services.
- » Impact on organisations of the features provided by IT systems.
- » Impact of IT systems on organisations when considering user experience, user needs, costs, timescales, implementation, productivity, training, support and security.
- » Using and manipulating data.

#### Unit 1 (Topic F: Issues)

- » Moral and ethical issues.
- » Legal issues.

### All students will be assessed:

- » Summative assessment on learning aim D, E and F using standardised resources from PG Online.
- » Selected exam questions from previous scripts.
- » AP2 Mock exam.

### Reading skills needed for this unit:

- » Students will be expected to scan, compare and understand short text information whilst appreciating and comparing advantages/disadvantages. They will need an understanding of key command vocabulary used by the exam board in questions.

### Key vocabulary:

File permissions, access rights, digital certificates, protocols, encryption, firewalls, anti-virus, real time scan, virus, hackers, phishing, legislation, unequal access.

## HALF TERM 3 IT SYSTEMS / DATA MODELLING

### All students will know:

#### Unit 1

- » Revision of main topics A, B, C, D, E, F prior to exam.
- » Revision of command verbs used in the exam.
- » Revision of extended questions.

#### Unit 5 (LAA )

- » Practical activities including common features such as lookups, validation, if statements, formulae, conditional formatting, functions, graphs, pivot tables and live feeds.
- » A1 Stages in the decision-making process.
- » A2 Spreadsheet features used to support data modelling.
- » A3 Using data modelling to consider alternatives.
- » A4 Evaluating models.
- » A5 Documenting and justifying decisions.

### All students will be assessed:

- » Selected exam questions from previous scripts.
- » Summative assessment, students will complete a piece of coursework for the data modelling unit and will be assessed internally.
- » AP3 U5 - Completion and submission of Assignment 1.

### Reading skills needed for this unit:

- » Students will read and decompose assignment scenarios
- » They will use inference to enable them to develop solutions.

### Key vocabulary:

Decision making, data modelling, features, factors, alternatives, formulae, functions, validation, verification, interpreting, presenting, inputs, outputs, evaluating.

## HALF TERM 4 DATA MODELLING

### All students will know:

#### Unit 5 (B)

- » B1 Functional specification
- » B2 Spreadsheet model design
- » B3 Reviewing and refining data model designs

#### Unit 5 (C)

- » C1 Developing a data model solution.
- » C2 Testing the data model solution.
- » C3 Reviewing and refining the data model solution.
- » C4 Skills, knowledge and behaviours.

#### Unit 5 (B/C) working on assessment 2

- » Design and develop a data model to meet client requirements.

### All students will be assessed:

- » Mock tasks to check practical and theory understanding and develop an understanding of the assessment evidence required.
- » AP4 Begin completion of the first part of A2.

### Reading skills needed for this unit:

- » Students will need to read scenarios and decompose tasks to identify and solve the requirements.

### Key vocabulary:

Functional, scenario, data entry, navigation, test plan, scheduling, timescales, design specification, sum, average, count, count if, lookup, if, goal seek, user interface, validation, compare, evaluate, analyse, alternative, internal, external, cell referencing, autofill, macros, import, sorting, grouping filtering, testing, test data.

## HALF TERM 5 IT SYSTEMS / DATA MODELLING

### All students will know:

#### Recap of Unit 5 topics B/C.

- » Students are completing assignment 2 of the unit and should now be on the second part where they are developing, testing, refining and evaluating their solution.

#### Unit 1 IT systems - revision of topics (Resit)

- » A - digital devices.
- » B - Transmitting data.
- » C - Operating online.
- » D - Protecting data and information.
- » E - Impact of IT systems.
- » F - Issues.

### All students will be assessed:

- » Resit mock exam.
- » Students will complete the resit for the IT systems exam which will be assessed externally.
- » Summative assessment, students will submit assignment 2 for unit 5.

### Reading skills needed for this unit:

- » Students will be expected to read to evaluate their own work, making judgements on their decisions and comparing outcomes with requirements.

### Key vocabulary:

See previous half terms for Unit 1 and Unit 5.

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## HALF TERM 6

All of year 13 will have left

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### ENRICHMENT OPPORTUNITIES

The school network manager will provide a talk on networking including reference to the threats that it experiences. It is hoped that students studying this course will undertake an appropriate and linked work experience placement. Students have the opportunity to support the technical support team within the academy to develop their independence and problem-solving skills. There are also opportunities for students to participate in a mentoring programme where KS4 students can be supported and developed. There is also a government cybercrime extra-curricular programme available which students can use to improve their understanding of crime whilst developing their problem-solving skills.

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### HOW THIS LEARNING WILL BE EMBEDDED ELSEWHERE IN THE CURRICULUM

There are links to business studies when students will be discussing the positive and negative impacts IT systems can have.

There are links to law as students need to have a secure understanding of the legislation in place that IT systems and users have to comply with. This includes the GDPR, creative commons license and computer misuse act.

Unit 5 links to maths due to the complex data models that are created.

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### HOW STUDENTS CAN BE SUPPORTED AT HOME

Students should use the revision guides that they have been given which covers the specification content.

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Students have been provided with sample exam papers and solutions which should be used for revision.