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BTEC Extended Certificate in Computing

Exam Board: Edexcel
Entry Criteria:
- **GCSE in Computer Science or equivalent**
- **Grade 5+ in Mathematics**

Overview

The Pearson BTEC Level 3 Extended Certificate in Computing is equivalent to 1 A-Level and provides an introduction to computing, preparing students for further education in this field or related disciplines. The course is designed to offer a solid grounding in the essential concepts of computing, combined with the opportunity to study in-depth topics through both practical and theoretical tasks. It involves independent and group work, with students encouraged to engage with additional reading and research outside of lessons.

The course includes a mix of theoretical concepts and practical skills. Topics covered include computer systems, IT security, encryption, and website development. Students will be expected to develop strong problem-solving, analytical, and practical computing skills.

Modules and Assessment:
- **Principles of Computer Science** (External examination)
- **Fundamentals of Computer Systems** (External examination)
- **IT Systems Security and Encryption** (Coursework)
- **Website Development** (Coursework)

Assessment Breakdown:

- **External assessment:** 45%
- **Internal assessment:** 55%

Super-curricular resources

- **edX - Harvard's CS50:** A popular introductory course covering core computer science concepts like algorithms, data structures, and web development.
- **TED Talk:** "The Future of Computing and Artificial Intelligence" by Kai-Fu Lee.
- **Netflix Documentary:** "Inside Bill's Brain: Decoding Bill Gates"
- **GitHub:** Exploring repositories and open-source projects to gain hands-on experience.
- **Microsoft Technology Associate (MTA):** A certification aimed at beginners, covering programming fundamentals, networking, and security.

Reading List

Books

- Artificial Intelligence: A Very Short Introduction by Margaret A. Boden
- Nine Algorithms That Changed the Future: The Ingenious Ideas That Drive Today's Computers by John MacCormick
- Social Media Marketing for Small Business Owners by Mark Warner
- 2000 Social Media Marketing Tricks by Invictus Media
- How Games Move Us (Emotion by Design) by Kathrine Isbister

Websites

- Computer Science Zone: (www.computersciencezone.org/blog)
- Treehouse Blog: (blog.teamtreehouse.com)
- How-To Geek: (www.howtogeek.com)

Complementary Subjects

- Maths
- Further Maths
- Physics
- Psychology
- Economics

Career Progression

Upon completing this qualification, students can progress to various career pathways in computing or related fields. Possible routes include:
- **University:** Study Computer Science, Software Engineering, Data Science, or related subjects.
- **Apprenticeships:** Gain practical experience in IT and computing roles.
- **Employment:** Start a career in the tech industry or related sectors.

Potential Career Options:
- Software Developer/Engineer
- Systems Analyst
- Network Architect
- Data Scientist/Analyst
- Machine Learning Engineer
- Cybersecurity Analyst
- Games Developer
- Cloud Solutions Architect
- IT Support Technician

Industries You Can Work In:
- Tech Companies
- Financial Services
- Healthcare
- Government
- Retail and E-commerce

The course prepares students for the technological challenges of the future, developing the essential skills for various computing roles across industries.