# **Higher Nationals**

# **Assignment Brief – BTEC (RQF)**

**Higher National Diploma in Computing**

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| **Student Name /ID Number** | **Aaron Mascarenhas** |
| **Unit Number and Title** | **Unit 5 - Security** |
| **Academic Year** | **2018-2019** |
| **Unit Assessor** | **Omar Mufti** |
| **Assignment Title** | **Security Guidebook** |
| **Issue Date** | **26.11.2018** |
| **IV Name** | **Dr Sam Al-Jajjoka** |
| **Draft submission date** | **11.01.2019** |
| **Final submission date** | **08.02.2019** |
| **Re-submission date (if required)** |  |

**Plagiarism**

Plagiarism is a particular form of cheating. Plagiarism must be avoided at all costs and students who break the rules, however innocently, may be penalised. It is your responsibility to ensure that you understand correct referencing practices. As a university level student, you are expected to use appropriate references throughout and keep carefully detailed notes of all your sources of materials for material you have used in your work, including any material downloaded from the Internet. Please consult the relevant unit lecturer or your course tutor if you need any further advice.

**Student Declaration**

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| **Student declaration**  I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.  Student signature: Aaron Date: 04/02/2019 |

**Learning Outcomes and Assessment Criteria**

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|  | Grading Criteria | Met | Grading Criteria | Met | Grading Criteria | Met |  |
| **LO1** | P1 |  | M1 |  | D1 |  |  |
| **LO1** | P2 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **LO2** | P3 |  | M2 |  | D1 |  |  |
| **LO2** | P4 |  |  |  |  |  |  |

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| **Assessor Feedback:** | | | | |
| **Grade:** | **Assessor Signature:** | | | **Date:** |
| **Resubmission Feedback:** | | | | |
| **Grade:** | **Assessor Signature:** | | | **Date:** |

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| Submission Format: |
| The submission is in the form of a guidebook **or** detailed report that provides more thorough, evaluated or critically reviewed technical information on all of the topics covered.  The recommended word limit is 2,000–2,500 words, although you will not be penalised for exceeding the total word limit.  You are required to make use of headings, paragraphs, subsections and illustrations as appropriate, and all work must be supported with research and referenced using the Harvard referencing system. |
| Unit Learning Outcomes: |
| LO1 - Assess risks to IT security.  LO2 - Describe IT security solutions. |
| Assignment Brief and Guidance: |
| Saint Albans Pharmaceuticals PLC is a large scale pharmaceuticals company based in England with 1000 staff and a turnover of £750m. It sells and develops cutting edge medicines for Parkinson’s disease in a global market where few companies research and develop such conditions. They are far ahead of all their competition and they are globally respected.  The company is fairly small, has just an office in Saint Albans and factory within Wales. All their infrastructure is 100% in-house due to security and privacy concerns, and they do not outsource any IT services at all. Their company website is also housed in their data centre and has various firewalls, intrusion prevention services, website application firewalls, an excellent patching regime and is monitored 24/7.  They have laptops with full disc encryption, firewall, antivirus (advanced), VPN and two factor authentication. Microsoft Active Directory is used to store their credentials and most systems use this for SSO (Single Sign On).  Being a pharmaceutical firm, rival companies and governments are after their R&D. Their office in Saint Albans has an advanced high security lab which tests new medicines on controlled environments and if successful then on humans under government approval and schemes. This office is controlled by swipe cards, biometrics, has many guards and staff are ferried in on buses.  You work as a trainee IT Security Specialist for a leading Security consultancy. As part of your role, your manager has asked you to create an engaging report to help train junior staff members on the tools and techniques associated with identifying and assessing IT security risks together with the organisational policies to protect business critical data and equipment.  You are to develop a guide book to discuss issues of security risk as well as evaluation of new and proposed security solution to enhance the current security infrastructure. These documents will be for junior staff members and be reviewed by management.  Your guidebook **or** detailed report should include a explanation of your risks as well as additional, evaluated or critically reviewed technical notes on all of the expected topics.  ***The Scenario has been approved by***  ***Mr Graeme Batsman***  ***Senior (Technical) Cyber Security Consultant***  ***APPS One UK CyberSecurity Unit***  ***Capgemini | Holborn, London***  ***Mobile: 07891 150 921 | Landline (Lync): 03305 877 911***  **Task 1**  In your guidebook, you need to explain what current IT security risks are involved with respect to Saint Albanspharmaceutical scenario as explained above. You should include the following issues.   * Unauthorised access/use of a system (inc hacking). * Unauthorised removal or copying of data or code from a system. * Damage to or destruction of physical system assets and environment. * Damage to or destruction of data or code inside or outside the system. * Naturally disasters/occurring risks.   To extend further on this guidebook you can propose a method to assess and treat the IT security risks above.  **Task 2**  Extend on your proposed guidebook, you need to describe the following security procedures that the company can utilise:   * The importance of business continuance. * The use of backup/restoration of data. * Regular security audits. * Testing procedures on data, network and systems as well as WANs, intranets, and wireless access systems. * The types of testing procedures in the event of security breaches and its impact.     **Task 3**    Furthermore, in the guidebook you need to include:   * What are the impacts to IT security of incorrect configuration of firewall policies and third party VPNs * Explain, using examples, how implementing a Demilitarised Zone (DMZ), static IP and NAT in a network can improve network security in Saint Albans.     **Task 4**  In addition to the guidebook you need to:   * Discuss on three benefits to implement network monitoring systems giving reasons for the benefits. * Investigate how a “trusted network” can form part of a IT security solution for the * pharmaceutical company. |

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| **Learning Outcomes and Assessment Criteria** | | |
| **Pass** | **Merit** | **Distinction** |
| **LO1** Assess risks to IT security | | **LO1 & 2 D1** Investigate how a ‘trusted network’ may be part of an IT security solution. |
| **P1** Identify types of security risks to organisations.  **P2** Describe organisational security procedures. | **M1** Propose a method to assess and treat IT security risks. |
| **LO2** Describe IT security solutions | |
| **P3** Identify the potential impact to IT security of incorrect configuration of firewall policies and third-party VPNs.  **P4** Show, using an example for each, how implementing a DMZ, static IP and NAT in a network can improve Network Security. | **M2** Discuss three benefits to implement network monitoring systems with supporting reasons. |