**9.1: Explain the impact that Big data, data warehousing and data mining have had on an organisation. (P1 – Task 4)**

**Overview of Data Mining**

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| Key points to cover: Automatic, Make Predictions, Mathematical and statistical analysis methods, Link to data warehousing, Benefits of data mining, Discovers patterns and trends from data. |

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| **Data Mining Analysis Method** | **Description** | **Possible Statistical or Mathematical Techniques** | **Possible Applications of this method (at least two)** |
| Cluster Analysis | Grouping similar sets of objects together | Pattern recognition Distribution-based clustering Grid-based clustering | Advertising to target particular groups, supermarkets to cluster together the same types of products |
| Anomaly Detection (Outlier Detection) | Detecting outliers that are completely different from norm.  Ats that deviate from a device's normal behaviour. | Percentile calculations Statistical processes | Credit card fraud, hacking to steal data |
| Association Rule | Associating different variables with each other | Spearman rankorder correlation coefficient Chi-square test | A thesaurus for synonyms, |
| Neural Network | A data mining technique that imitates the human's way of thinking, they can adapt, organize and generalize data | It is based off various statistical models | An AI or search engine, the stock market prediction |

**How could Bury college use data mining?**

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| Thye could use it to make predictions of future trends in students' courses to make sure that they are up to date. They could also use it to get the best possible study materials for students out of the many that exist. |