VCE Algorithmics (HESS): Performance descriptors

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| **ALGORITHMICS (HESS) UNIT 4 OUTCOME 3**  **SCHOOL-ASSESSED COURSEWORK** | | | | | |
| **Performance descriptors** | | | | | |
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| **Unit 4**  **Outcome 3**  **On completion of this unit the student should be able to explain the historical context for the emergence of computer science as a field and discuss modern machine learning techniques and the philosophical issues they raise.** | **DESCRIPTOR: typical performance in each range** | | | | |
| **Very low** | **Low** | **Medium** | **High** | **Very high** |
| Very limited description of the historical connections between the foundational crisis in mathematics and the origin of computer science. | Some explanation of the historical connections between the foundational crisis in mathematics and the origin of computer science. | Satisfactory explanation of the historical connections between the foundational crisis in mathematics and the origin of computer science. | Detailed explanation of the historical connections between the foundational crisis in mathematics and the origin of computer science. | Thorough explanation of the historical connections between the foundational crisis in mathematics and the origin of computer science. |
| Very limited description of the concept of undecidability and its implications for the limits of computation. | Some explanation of the concept of undecidability and its implications for the limits of computation. | Satisfactory explanation of the concept of undecidability and its implications for the limits of computation. | Detailed explanation of the concept of undecidability and its implications for the limits of computation. | Thorough explanation of the concept of undecidability and its implications for the limits of computation. |
| Very limited description of philosophical conceptions of artificial intelligence and the Chinese Room Argument. | Some explanation of philosophical conceptions of artificial intelligence and the Chinese Room Argument. | Satisfactory explanation of philosophical conceptions of artificial intelligence and the Chinese Room Argument with some analysis of these ideas. | Detailed explanation of philosophical conceptions of artificial intelligence and the Chinese Room Argument with a clear analysis of these ideas. | Thorough explanation of philosophical conceptions of artificial intelligence and the Chinese Room Argument with a sophisticated analysis of these ideas. |
| Very limited description of data-driven algorithms, including support vector machines and neural networks. | Some explanation of data-driven algorithms, including support vector machines and neural networks. | Satisfactory explanation of data-driven algorithms, including support vector machines and neural networks. | Detailed explanation of data-driven algorithms, including support vector machines and neural networks. | Thorough explanation of data-driven algorithms, including support vector machines and neural networks. |

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|  | Very limited description of ethical issues related to artificial intelligence and data-driven algorithms. | Some explanation of ethical issues related to artificial intelligence and data-driven algorithms. | Some analysis of ethical issues related to artificial intelligence and data-driven algorithms with a limited synthesis of how these can result from the training of algorithms using data. | Clear analysis of ethical issues related to artificial intelligence and data-driven algorithms with some synthesis of how these can result from the training of algorithms using data. | Sophisticated analysis of ethical issues related to artificial intelligence and data-driven algorithms with a detailed synthesis of how these can result from the training of algorithms using data. |

KEY to marking scale based on the Outcome contributing 50 marks

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| Very Low 1–10 | Low 11–20 | Medium 21–30 | High 31–40 | Very High 41–50 |