VCE Algorithmics (HESS): Performance descriptors

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| **ALGORITHMICS (HESS) UNIT 3 OUTCOME 1**  **SCHOOL-ASSESSED COURSEWORK** | | | | | |
| **Performance descriptors** | | | | | |
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| **Unit 3**  **Outcome 1**  **On completion of this unit the student should be able to define and explain the representation of information using abstract data types, and devise formal representations for modelling various kinds of real-world information problems using appropriate abstract data types.** | **DESCRIPTOR: typical performance in each range** | | | | |
| **Very low** | **Low** | **Medium** | **High** | **Very high** |
| Identifies some motivations for the abstraction of data. | Discusses how an ADT property could be used to model an aspect of a particular problem. Little discrimination is demonstrated when identifying features of the problem. | Explains the role of ADTs for data modelling. | Describes in detail the suitability of appropriate ADTs for creating a model in a given problem context. | Compares and justifies the selection of appropriate ADTs for creating a model and outlines limitations of different representations. |
| Uses limited metalanguage when describing ADTs. | Executes a sequence of ADT operations to a given ADT instance. | Reads, writes and uses ADTs. | Writes complete signature specifications for several ADTs, fully in appropriate metalanguage. | Specifies a non-trivial new operation for one of the standard ADTs to meet requirements that cannot be satisfied by the standard definition. |
| Limited use of terminology in describing graph properties. | Confirms or rejects the properties of a graph given as a diagram. | Identifies and describes the properties of graphs. | Analyses the interconnections between the properties of graphs using correct terminology. | Analyses the properties satisfied by a given graph and derives another graph property using as evidence the existing specified properties of graphs. |
| Identifies an example problem attribute that could be modelled by a graph node or edge. | Discusses some aspects of a problem, including planning problems from a given data model instance. | Applies ADTs to real-world problems. The full range of problem instances can be represented. | Models and fully represents a specific problem instance as a data model using a combination of ADT representations. | Models fully a specific problem instance as a data model with a combination of ADTs, and appropriately justifies the assigned priority of several aspects of the problem to the specific context of the problem. |
| Scaffolding is required to create a basic model. | Some aspects of the problem are modelled. | Models basic network and planning problems with graphs. | Models and fully represents planning problems using the graph ADT in combination with other ADTs where appropriate. | Models fully and justifies the priorities used in the representation of the planning problem using graph and other ADTs. |

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 |