

**Aces Centre** **ICAA4058B**  
**Apply skills in object-oriented design**

- Elements
  - Derive the high-level design from specification
  - Refine the design
  - Document the design

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**Aces Centre** **Element 1: Derive the high-level design from specification**

- Performance Criteria
  - Develop a static class diagram from a given set of *specifications*
  - Develop either a collaboration diagram or a sequence diagram from a given set of *specifications*
  - Develop either an activity diagram or a state diagram from a given set of *specifications*

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**Aces Centre** **Element 2: Refine the design**

- Performance Criteria
  - Investigate and refine behaviour, state of classes and the collaboration between classes
  - Validate the correct visibility of class services and state data
  - Identify generalisations within classes
  - Identify specialisations within classes
  - Apply the principles of aggregation and composition to refine class design

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**Aces Centre** **Element 3: Document the design**

- Performance Criteria
  - Create detailed uniform modelling language (*UML*) static class diagrams
  - Create detailed *UML* collaboration or sequence diagrams
  - Create detailed *UML* activity or state diagrams

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**Aces Centre** **Apply skills in object-oriented design**

- Knowledge
  - Design refinement techniques
  - Implementation of design principles
  - Various life cycle options
  - Methodological philosophy
  - Design quality metrics (e.g. coupling and cohesion)

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**Aces Centre** **Apply skills in object-oriented design**

- Skills
  - Domain analysis in relation to successfully producing the required design
  - Completion of abstractions in relation to successfully producing the required design
  - Refinement of inheritance hierarchies in relation to successfully producing the required design

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● Skills

- Class naming in relation to successfully producing the required design
- Abstract classes in relation to successfully producing the required design