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| **Module: Mobile Application Programming** |

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| **Competency** | 1. Configure software development environment |
| **TSC Reference** | * + Business Needs Analysis [Level 2] |
| **CCS Reference** | * + Transdisciplinary [Intermediate] |

| **Performance Criteria** | **Technical Knowledge** |
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| * Identify the appropriate mobile application development tools according to requirements. * Set up software development environment correctly according to requirements. * Set up libraries and components correctly by following the required process. | 1. Explain the different types of tools used for developing mobile applications. 2. Explain the purpose of a software development kit manager. 3. Describe the process in setting up the libraries and components. |

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| **Competency** | 1. Build user interface for mobile devices |
| **TSC Reference** | * + Business Needs Analysis [Level 2] |
| **CCS Reference** | * + Transdisciplinary [Intermediate] |

| **Performance Criteria** | **Technical Knowledge** |
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| * Identify the appropriate types of elements according to requirements. * Add user interface correctly according to requirements. * Configure user interface using the correct methods. | 1. Explain the different types of user interface elements found on a mobile device. 2. Explain the function of different user interface element types. 3. Describe the methods of configuring user interface for mobile devices. |

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| **Competency** | 1. Integrate functions for interactivity |
| **TSC Reference** | * + Business Needs Analysis [Level 2] |
| **CCS Reference** | * + Transdisciplinary [Intermediate] |

| **Performance Criteria** | **Technical Knowledge** |
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| * Integrate event handlers correctly to build an interactive application according to requirements. * Connect API service correctly according to requirements. * Compile and execute interactive application correctly according to requirements. | 1. Identify the various types of user interaction on a mobile device. 2. Explain the steps to consume an API service (e.g. Location Service) on a mobile application. 3. Explain the usage of event handlers. 4. Describe the various methods of compiling and executing a mobile application. |

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| **Competency** | 1. Incorporate data processing within an application |
| **TSC Reference** | * + Data Strategy [Level 4]   + Test Planning [Level 3] |
| **CCS Reference** | * + Transdisciplinary [Intermediate] |

| **Performance Criteria** | **Technical Knowledge** |
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| * Create data storage correctly according to the requirements. * Manipulate data records (eg. store, update and delete) correctly according to requirements. * Retrieve data records from external services for display correctly according to requirements. * Handle data access errors correctly according to requirements. | 1. Identify the various methods of storing data for a mobile application. 2. Describe the process of consuming a web service. 3. Describe the various methods of handing data access errors in a mobile application, eg.:  * Compilation Errors * Run-time Errors * Exception Errors * Logical Errors |

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| **Competency** | 1. Perform application packaging for publishing onto mobile devices |
| **TSC Reference** | * + Business Needs Analysis [Level 2] |
| **CCS Reference** | * + Transdisciplinary [Intermediate] |

| **Performance Criteria** | **Technical Knowledge** |
| --- | --- |
| * Configure device simulator correctly for application testing, according to requirements. * Convert mobile application is into an application package file successfully according to requirements. * Publish mobile application package file to the market place according to requirements. | 1. Describe the purpose of creating an application package file. 2. Identify the steps to deploy application package file:    1. generate application package file    2. install an application package file onto a mobile device    3. publish mobile application package file to Market place |