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| **Qualification Details** | | | |
| **Training Package Code & Title** | **UEE11 – Electrotechnology Training Package (Release 6.0)** | | |
| **Qualification National Code &**  **Title** | **UEE40720 – Certificate IV in Electronics and**  **Communications** | **State code:** | **BFP4** |
| **UEE40120 – Certificate IV in**  **Computer Systems** |  | **BFL8** |
| **UEE50520 – Diploma of Electronics and**  **Communications Engineering** |  | **BFP5** |
| **UEE50120 – Diploma of**  **Computer Systems Engineering** |  | **BFQ6** |

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| **Units of Competency (UoC) detailed in this DAP | Week/Stage/Block/Cluster :** | |
| **Unit National code and title** | **State Code** |
| UEECS0020 – Evaluate and modify object-oriented code programs | OCA73 |
| UEEIC0012 – Develop structured programs to control external devices | OCA08 |

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| **Duration of Training/location and group details** | | | | | |
| **Start date (Group 1)** | **29/01/2024** | **End date:** | **17/06/2024** | **Session Times:** | Monday AM 09:00 – 12:00 |
| **Location** | Thornlie Campus, Block 8, Room 8F59 | | | | |
| **Group Details** | Semester 1, 2024 | | | | |
| **Mode of delivery** | Face to face  Combination (describe)  Flexible  Other  On-the-job  **PowerPoint presentation / face to face laboratory practical / flexible delivery using PowerPoint presentation** | | | | |
| **Individual study requirements** | In addition to scheduled class time, students are expected to complete 3.5 hours of self- directed study, readings, or prescribed activities per week. This time may also be used to completed assigned assessment tasks outside of scheduled class time | | | | |

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| **Pre-requisite requirements** |
| Granting competency in **UEECS0020** shall be made only after competency in the following unit have been confirmed:   * N/A   Granting competency in UEEIC0012 shall be made only after competency in the following unit has been confirmed:   * **UEECD0007** – Apply Occupational Health and Safety regulations, codes, and practices in the workplace |

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| **Lecturer contact information** |
| **Email**: saranya.chandrukannan@smtafe.wa.edu.au  **Location**: Room 8F59, Thornlie Campus |

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| **Required resources, texts, equipment you will need** |
| • PowerPoint presentations will be available for students to download onto their own thumb drive. Useful for students who miss a class or require additional learning.  • Provided by student:   * USB “Flash drive” (or similar)   • Provided by college:   * Lab PC with Internet access * Raspberry Pi (with SD Card and required cables) * Raspberry Pi Sense HAT * Blackboard Shell |

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| **Work Health and Safety (WHS) arrangements/requirements:** |
| Learners are expected to follow health, safety, and well-being requirements and must ensure they do not endanger themselves, other,s or the equipment used in this course.  • Please wear enclosed footwear  • Long pants & long-sleeved shirt is recommended  • Recommend adjusting your chair to work in the lab workstation comfortably, while allowing for voluntary changes in the working position.  o Stand in front of the chair. Adjust the height so the highest point of the seat, (when in the horizontal position), is just below the kneecap.  o Sit on the chair and keep your feet flat on the floor.  o Adjust the backrest forwards and backward as well as up and down so that it fits the hollow in your lower back.  o Sit upright with your arms hanging loosely by your sides.  Consumption of food/drink is strictly avoided inside class and lab areas to avoid accidental spills on computers and peripherals. |

**Additional Information**

The following information is to be read in conjunction with the “Current Students” section of the website.

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| **Recognition of Prior Learning (RPL) / Credit / Credit Transfer** |
| You are encouraged to speak to your lecturer about the possibility of recognition of prior learning if you believe you have any existing skills and knowledge that may be formally recognised towards the unit or qualification you are undertaking.  If you have previously completed qualifications or units speak to your Lecturer regarding the possibility of credit or credit transfer. |

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| **Assessment Rules and Appeals Process** |
| If your first submission is deemed not satisfactory you will be allowed one further attempt. This is to be negotiated with your lecturer. You are entitled to appeal if you are not satisfied with the assessment process or outcome. The appeal must be lodged within 20days of receiving the assessment information or outcome. In the first instance, approach your lecturer for information about the process, or check the ‘current students’ section of the SM TAFE website. |

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| **Absences** |
| If you are unable to attend any class or assessment session you must inform your lecturer as soon as possible.  If you miss an assessment due to illness, please provide your lecturer with a medical certificate in order to negotiate an alternate time for the assessment. |

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| **Reasonable adjustment in the assessment process** |
| In some circumstances, adjustments to assessments may be made for you. If you require support for literacy and numeracy issues; support for hearing, sight or mobility issues; change to assessment times/venues; use of special or adaptive technology; considerations relating to age, gender and cultural beliefs; format of assessment materials; or presence of a scribe you need to inform your lecturer. |

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| **Student support** |
| South Metropolitan TAFE has a number of services available to assist and support you while you are an enrolled student. See <https://www.southmetrotafe.wa.edu.au/student-services/student-support> These include:  A Student Support Services team facilitating:   * Reasonable adjustment for students with disclosed disability * Aboriginal student support * Study skills support for students with disclosed disability   Academic support that may be arranged by your lecturer (CAVSS or USIQ) to support language, literacy and numeracy. Where arranged, this support will be part of your regular classes.  Library services (available on many campuses, and also online) to support your studies. |

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| **Delivery and assessment schedule** | | | |
| **Week/**  **session** | **Topic** | **Link to UOC**  *(Element level only)* | **Assessments** |
| 1 | **Module** **Introduction (Part 1):**  • Introduction to the cluster  • Introduction to WHS procedures  • Hazards in workplace  • Introduction to Python programming  • Code examples  • Introduction to the Raspberry Pi  Out of class activity (~90 minutes)   * Repeat activities from class | **UEECS0020**:  1.1/ 1.2 / 1.3 / 1.4/ 1.5  **UEEIC0012:**  1.1/ 1.2 / 1.3 / 1.4/ 1.5 / 1.6 / 2.1 |  |
| 2 | **Module Introduction (Part 2):**   * Python variables * Statement and expression * Python basic data types   + int   + float   + string * Operators * The *print()* function * Pseudo code and flow charts * Pseudo code and flowchart overview   **Out of class activity (~90 minutes)**   * Repeat activities from class | **UEECS0020**:  1.1/ 1.2 / 1.3 / 1.4/ 1.5  **UEEIC0012:**  1.1/ 1.2 / 1.3 / 1.4/ 1.5 / 1.6 |  |
| 3 | **Python control structures:**   * If, else, elif * The *input()* function * Casting   + int()   + float()   Out of class activity (~90 minutes)   * Repeat activities from class * More examples ..Refreshment (Prescribed reading) | **UEECS0020:**  2.1/ 2.2/ 2.3/ 2.4/ / 2.5  **UEEIC0012:**  2.2/ 2.3/ 2.4/ 2.5/ 2.6 |  |
| 4 | **Loops in Python:**   * while * for   **Out of class activity (~90 minutes)**   * Repeat activities from class * Practice loops | **UEECS0020:**  2.1/ 2.2/ 2.3/ 2.4/ / 2.5  **UEEIC0012:**  2.2/ 2.3/ 2.4/ 2.5/ 2.6 |  |
| 5 | **Lists in Python:**   * List types * Creating a List * List index * List iterating * Changing List contents   + Adding items   + Appending items   + Removing items * Functions * Defining functions * Function parameters   **Out of class activity (~90 minutes)**   * Repeat activities from class | **UEECS0020**:  2.1/ 2.2/ 2.3/ 2.4/ / 2.5  **UEEIC0012:**  2.2/ 2.3/ 2.4/ 2.5/ 2.6 |  |
| 6 | **Classes in Python:**   * Using Classes * Defining Classes * Class variables * Private variables * Class methods * Objects   **Out of class activity (~90 minutes)**   * Repeat activities from class * Class activity | **UEECS0020:**  2.1/ 2.2/ 2.3/ 2.4/ / 2.5  **UEEIC0012:**  2.2/ 2.3/ 2.4/ 2.5/ 2.6 | **Portfolio 1** |
| 7 | **Exceptions in Python:**   * Handling Exceptions   + try-except   + finally * Built-in Exceptions   + BaseException   + ZeroDivisionError   + ValueError   **Out of class activity (~90 minutes)**   * Repeat activities from class | **UEECS0020:**  3.1/ 3.2/ 3.3  **UEEIC0012:**  3.1/ 3.2/ 3.3 | **Portfolio 1 DUE** |
| 8 | **Introduction to Raspberry Pi hardware:**   * Raspberry Pi * Raspberry Pi Sense HAT * Setting up the Raspberry Pi   + Imaging the Raspberry Pi SD Card * Python source files   + Creating a Python source file     - xxx.py file extension   + Running Python programs from a Python source file   **Out of class activity (~90 minutes)**   * Repeat activities from class | For **UEECS0020**  and **UEEIC0012**  All | **Portfolio 2** |
| 9 | **Assessment session:**   * Sorting * Portfolio Activity 2 * Class activity   **Out of class activity (~90 minutes)**   * Repeat activities from class | For **UEECS0020**  and **UEEIC0012**  All | **Portfolio 2 DUE** |
| 10 | Resit Portfolio1 & Portfolio2 |  |  |
| **Term Break** | | | |
| 11 | **Revision session:**   * Discussion regarding common issues and misunderstandings from Portfolio Activity 2 * Review of Term 1 topics * Class Activity   **Out of class activity (~90 minutes)**   * Repeat activities from class | For **UEECS0020**  and **UEEIC0012**  All |  |
| 12 | **File Access:**   * Creating files * Writing text to files * Reading text from files * Class Activity 12     **Out of class activity (~90 minutes)**   * Repeat activities from class | For **UEECS0020**  and **UEEIC0012**  All |  |
| 13 | **Recursion, Tuples and Dictionaries:**   * String methods   + format() method   + strip() method   + split() method   **Out of class activity (~90 minutes)**   * Repeat activities from class | For **UEECS0020**  and **UEEIC0012**  All |  |
| 14 | **Assessment session:**   * Portfolio Work🡪 **Portfolio Activity 3** * Comma-Seperated Value (CSV) Files   **Out of class activity (~90 minutes)**   * Repeat activities from class | For **UEECS0020**  and **UEEIC0012**  All | **Portfolio 3** |
| 15 | **Assessment session:**   * Portfolio Activity 3   **Out of class activity (~90 minutes)**   * Repeat activities from class | For **UEECS0020**  and **UEEIC0012**  All | **Portfolio 3 DUE** |
| 16 | **Assessment session:**   * Pygal chart module * Creating charts   **Out of class activity (~90 minutes)**   * Repeat activities from class   **Assessment session:**  Portfolio Activity 4 | For **UEECS0020**  and **UEEIC0012**  All | **Portfolio 4** |
| 17 | **Assessment session:**   * Portfolio Activity 4 | For **UEECS0020**  and **UEEIC0012**  All | **Portfolio 4 DUE** |
| 18 | **Assessment session:**   * AT5 Knowledge based Assessment | For **UEECS0020**  and **UEEIC0012**  All | AT5 |
| 19 | **Assessment session**   * AT5 Knowledge based Assessment resubmissions | For **UEECS0020**  and **UEEIC0012**  All | AT5 |
| 20 | Catch-up and feedback session | For **UEECS0020**  and **UEEIC0012**  All |  |

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| **AT1** | |
| **Title** | Portfolio Task 01 |
| **Brief Description** | This Portfolio task 1 introduces student to understanding the use of operators, user input and literals. To deepen student understanding of Python you are required to attempt all activities and questions. |
| **Where** | In Class |
| **When** | Session 6 and Session 7 |
| **Conditions** | Open book, equipment provided |

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| **AT2** | |
| **Title** | Portfolio Task 02 |
| **Brief Description** | Write a Python program that gets input from the user and uses that information to set the location an colour of an LED on the Raspberry Pi Sense HAT. |
| **Where** | In Class |
| **When** | Session 8 and Session 9 |
| **Conditions** | Open book, equipment provided. |

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| **AT3** | |
| **Title** | Portfolio Task 03 |
| **Brief Description** | Write a Python program that gets data from the Raspberry Pi Sense HAT. Store the data with a timestamp in a CSV file. |
| **Where** | In Class |
| **When** | Session 14 and session15 |
| **Conditions** | Open book, equipment provided. |

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| **AT4** | |
| **Title** | Portfolio Task 04 |
| **Brief Description** | Write a Python program that gets data from the CSV file created in Portfolio Task 03 and displays it as a line chart using the Pygal/Pandas chart module. |
| **Where** | In Class |
| **When** | Session 16 and Session17 |
| **Conditions** | Open book, equipment provided. |

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| **AT5** | | | | |
| **Title** | Knowledge based Assessment | | | |
| **Brief Description** | This is an open book written assessment.  Learners are required to provide short written answers.  This assessment examines the required knowledge of this unit. | | | |
| **Where** | In Class | | | |
| **When** | Session 18 and Session19 | | | |
| **Conditions** | open book, equipment provided. | | | |
| **Qualification Details** | | | | | |
| **Training Package Code & Title:** | | **UEE11 – Electrotechnology Training Package (Release 2.0)** | | | |
| **Qualification Code & Title:** | | **UEE40720 – Certificate IV in Electronics and Communications** | **State code** | **BFP4** | |
| **UEE40120 – Certificate IV in Computer Systems** |  | **BFL8** | |
| **UEE50520 – Diploma of Electronics and Communications engineering** |  | **BFP5** | |
| **UEE50120 – Diploma of Computer Systems Engineering** |  | **BFQ6** | |

**Student Declaration**

I have read the delivery and assessment plan for:

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| Unit/s of Competency: |
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The delivery and assessment details have been discussed with me. I understand my role and responsibilities and agree to undertake the assessment tasks as detailed in the delivery and assessment plan.

I am aware that all assessment work I submit must be my own work and must abide by all the assessment rules set by my lecturer.

I am aware that my lecturer may seek to verify the authenticity of any unsupervised assessment activities I may have undertaken to confirm it is my own work

I also understand that copying directly from research sources or another student’s work without acknowledgement is plagiarism. I further understand that plagiarised work (or cheating of any kind) will not be accepted and may result in disciplinary action taken against me.

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| **#** | **Student name (please print)** | **Date** | **Signature** |
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