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| Task 1 |
| **Toolkit**   * 2 x Male to male DuPont cables * Bread Board * LED * 1x Double AA Battery Pack   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to:   * Connect LED to bread board * Connect Battery pack to Breadboard * Power LED on the Bread board   Please read chapter 3: Equipment for guidance.  Thank you, this is the end of Task 1.  We will ask you to start the next task shortly. |

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| Task #1 | | Power LED though breadboard with battery pack | | |  |
| Description: The user must be able to power the LED using the battery power pack though the breadboard. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
| 🞏 | Step 1 | |  |  | |
| 🞏 | Step 2 | |  |  | |
| 🞏 | Step 3 | |  |  | |
| 🞏 | Step 4 | |  |  | |
| General Comments: | | | | | |

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| Task 2 |
| **Toolkit**   * ESP8266\_1 * 5 x Female-Male DuPont cables * 2 x Male-male DuPont cables * USB to serial adapter * Micro USB to USB cable * Breadboard   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to Connect the ESP8266\_1 to the PC via the supplied serial to USB adapter, power the chip and verify communication. Please follow the guide on the wiki to do this.  What was the heap size on the ESP8266\_1?  Heap size: \_\_\_\_\_\_\_\_  Thank you, this is the end of Task 2.  We will ask you to start the next task shortly. |

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| Task #2 | | Connect the ESP8266\_11 to the PC via the supplied serial to USB chip | | |  |
| Description: The user must be able to achieve serial communication and supply power to the ESP8266\_1 chip by following the wiki guide. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
|  | 0 (located correct section in guide) | |  |  | |
| 🞏 | 1 (wiring) | |  |  | |
| 🞏 | 2 | |  |  | |
| 🞏 | 3 | |  |  | |
| 🞏 | 4 | |  |  | |
| 🞏 | 5 | |  |  | |
| 🞏 | 6 | |  |  | |
| 🞏 | 7 | |  |  | |
| General Comments | | | | | |

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| Task 3 |
| **Toolkit**   * ESP8266\_12 * 4x female to male DuPont cables * USB to serial adapter * Micro USB to USB cable   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to Connect the ESP8266\_12 to the PC via the supplied serial to USB adapter, power the chip and verify communication. Please follow the guide on the wiki to do this.  What was the heap size on the ESP8266\_12?  Heap size: \_\_\_\_\_\_\_\_  Thank you, this is the end of Task 3.  We will ask you to start the next task shortly. |

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| Task #3 | | Connect the ESP8266\_12 to the PC via the supplied serial to USB chip | | |  |
| Description: The user must be able to achieve serial communication and supply power to the ESP8266\_12 chip by following the wiki guide. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
|  | 0 (located correct section in guide) | |  |  | |
| 🞏 | 1 (wiring) | |  |  | |
| 🞏 | 2 | |  |  | |
| 🞏 | 3 | |  |  | |
| 🞏 | 4 | |  |  | |
| 🞏 | 5 | |  |  | |
| 🞏 | 6 | |  |  | |
| 🞏 | 7 | |  |  | |
| General Comments | | | | | |

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| Task 4 |
| **Toolkit**   * ESP8266\_1 * 6 x Female-Male DuPont cables * 2 x Male-male DuPont cables * USB to serial adapter * Micro USB to USB cable * Breadboard   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to flash the NodeMCU firmware to the ESP8266\_1 chip and verify that it is flashed successfully. Follow the guide from the wiki.  What is the result of issuing “chip id” from the commands section of NodeMCU.  result: \_\_\_\_\_\_\_\_  Thank you, this is the end of Task 4.  We will ask you to start the next task shortly. |

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| Task #4 | | Flash the NodeMCU firmware to the ESP8266\_1 chip | | |  |
| Description: The user needs to be able to flash new firmware, by following the wiki guide on the topic. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
| 🞏 | 0 (located correct section in guide) | |  |  | |
| 🞏 | 1 | |  |  | |
| 🞏 | 2 | |  |  | |
| 🞏 | 3 | |  |  | |
| 🞏 | 4 | |  |  | |
| 🞏 | 5 | |  |  | |
| 🞏 | 6 | |  |  | |
| 🞏 | 7 | |  |  | |
| 🞏 | 8 | |  |  | |
| 🞏 | 9 | |  |  | |
| General Comments | | | | | |

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| Task 5 |
| **Toolkit**   * ESP8266\_12 * Jumper * 4x female to male DuPont cables * USB to serial adapter * Micro USB to USB cable   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to flash the NodeMCU firmware to the ESP8266\_12 chip and verify that it is flashed successfully. Follow the guide from the wiki.  What is the result of issuing “chip id” from the commands section of NodeMCU.  result: \_\_\_\_\_\_\_\_  Thank you, this is the end of Task 4.  We will ask you to start the next task shortly. |

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| Task #5 | | Flash the NodeMCU firmware to the ESP8266\_12 chip | | |  |
| Description: The user needs to be able to flash new firmware, by following the wiki guide on the topic. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
| 🞏 | 0 (located correct section in guide) | |  |  | |
| 🞏 | 1 | |  |  | |
| 🞏 | 2 | |  |  | |
| 🞏 | 3 | |  |  | |
| 🞏 | 4 | |  |  | |
| 🞏 | 5 | |  |  | |
| 🞏 | 6 | |  |  | |
| 🞏 | 7 | |  |  | |
| 🞏 | 8 | |  |  | |
| 🞏 | 9 | |  |  | |
| General Comments | | | | | |

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| Task 6 |
| Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to write a very simple lua function, but referring to the wiki section on lua to aid with syntax. The function below is written in pseudo code. Please rewrite it in Lua. If you are already familiar with the lua scripting language please inform us before undertaking this task.  <pseudo code>  Public function ( Dictionary<int, double> armor ) //dictionary aka hashmap  {  string s = "you took damage of: ";  int i = Random.nextInt(10); //between 1 and 10  return s+ armor[i]  }  </code>  How did you do the dictionary (aka hashtable / hashmap) in Lua?  answer: \_\_\_\_\_\_\_\_  Thank you, this is the end of Task 4. |

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| Task #6 | | Write a very simple LUA function | | |  |
| Description: The user needs to be able to refer to the wiki to quickly get past any lua knowledge gaps. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
| 🞏 | 1. Find the correct section in the wiki | |  |  | |
| 🞏 |  | |  |  | |
| 🞏 |  | |  |  | |
| 🞏 |  | |  |  | |
| General Comments | | | | | |

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| Task 7 |
| **Toolkit**   * ESP8266\_1 * 6 x Female-Male DuPont cables? * 2 x Male-male DuPont cables? * LED * Breadboard * USB to serial adapter * Micro USB to USB cable   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to:   * Blink the LED on the ESP8266\_1 * Perform PWM to adjust the brightness of LED * Using timer to blink the LED repeatedly   Please follow the guide on wiki to do this.  Thank you, this is the end of Task 7.  We will ask you to start the next task shortly. |

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| Task #7 | | Code to blink the LED on the ESP8266\_1 using the ESPlorer IDE | | |  |
| Description: The user must be able to blink the LED on the ESP8266 - 1 on/off on the ESPlorer using the code given at the guide. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
|  | 0 (located correct section in guide) | |  |  | |
| 🞏 | Step 1 | |  |  | |
| 🞏 | Step 2 | |  |  | |
| 🞏 | Step 3 | |  |  | |
| 🞏 | Step 4 | |  |  | |
| 🞏 | Step 5 | |  |  | |
| 🞏 | Step 6 | |  |  | |
| 🞏 | Step 7 | |  |  | |
| General Comments: | | | | | |

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| Task 8 |
| **Toolkit**   * ESP8266\_12 * 4 x Female to male DuPont cables * USB to serial adapter * Micro USB to USB cable   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to:   * Blink the LED on the ESP8266\_12 * Perform PWM to adjust the brightness of LED * Using timer to blink the LED repeatedly   Please follow the guide on wiki to do this.  Thank you, this is the end of Task 8.  We will ask you to start the next task shortly. |

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| Task #8 | | Code to blink the LED on the ESP8266 - 12 using the ESPlorer IDE | | |  |
| Description: The user must be able to blink the LED on the ESP8266 - 12 on/off on the ESPlorer using the code given at the guide. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
|  | 0 (located correct section in guide) | |  |  | |
| 🞏 | Step 1 | |  |  | |
| 🞏 | Step 2 | |  |  | |
| 🞏 | Step 3 | |  |  | |
| 🞏 | Step 4 | |  |  | |
| 🞏 | Step 5 | |  |  | |
| 🞏 | Step 6 | |  |  | |
| 🞏 | Step 7 | |  |  | |
| General Comments: | | | | | |

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| Task 9 |
| **Toolkit**   * ESP8266\_1 * 6 x Female-Male DuPont cables? * 2 x Male-male DuPont cables? * LED * Breadboard * USB to serial adapter * Micro USB to USB cable   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to:   * Set Wi-Fi mode and get ip address * Create webserver on ESP8266\_1 * Blink the LED on the ESP8266 – 1 through a webserver * Save init.file to ESP8266\_1   Please follow the guide on wiki to do this.  Thank you, this is the end of Task 9.  We will ask you to start the next task shortly. |

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| Task #9 | | Code to blink the LED through the webserver on the ESP8266 – 1 using the ESPlorer IDE | | |  |
| Description: The user must be able to blink the LED on the ESP8266 - 1 on/off on the ESPlorer through the webserver using the code given at the guide. Save the file to init so the device can boot up the code on startup. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
|  | 0 (located correct section in guide) | |  |  | |
| 🞏 | Step 1 | |  |  | |
| 🞏 | Step 2 | |  |  | |
| 🞏 | Step 3 | |  |  | |
| 🞏 | Step 4 | |  |  | |
| 🞏 | Step 5 | |  |  | |
| 🞏 | Step 6 | |  |  | |
| 🞏 | Step 7 | |  |  | |
| 🞏 | Step 8 | |  |  | |
| 🞏 | Step 9 | |  |  | |
| General Comments: | | | | | |

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| Task 10 |
| **Toolkit**   * ESP8266-12 * 4 x Female to male DuPont cables * USB to serial adapter * Micro USB to USB cable   **Task**  Please read the following task. When you are ready to start please say “Ready”.  In this task we would like you to:   * Set Wi-Fi mode and get ip address * Create webserver on ESP8266\_12 * Blink the LED on the ESP8266 – 12 through a webserver * Save init.file to ESP8266\_12   Please follow the guide on wiki to do this.  Thank you, this is the end of Task 10.  We will ask you to start the next task shortly. |

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| Task #10 | | Code to blink the LED through the webserver on the ESP8266 - 12 using the ESPlorer IDE | | |  |
| Description: The user must be able to blink the LED on the ESP8266 - 12 on/off on the ESPlorer through the webserver using the code given at the guide. Save the file to init so the device can boot up the code on startup. | | | | | |
| Completed (Y/N): | |  | | | |
| Time spent on task: | |  | | | |
| Action Sequence | | | User Comments | Observer Comments | |
|  | 0 (located correct section in guide) | |  |  | |
| 🞏 | Step 1 | |  |  | |
| 🞏 | Step 2 | |  |  | |
| 🞏 | Step 3 | |  |  | |
| 🞏 | Step 4 | |  |  | |
| 🞏 | Step 5 | |  |  | |
| 🞏 | Step 6 | |  |  | |
| 🞏 | Step 7 | |  |  | |
| 🞏 | Step 8 | |  |  | |
| 🞏 | Step 9 | |  |  | |
| General Comments: | | | | | |