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|  | **THE UNIVERSITY OF SHEFFIELD Department of Electronic and Electrical Engineering**  **3rd Year Individual Project** | | | |  |
| **Student** | | Tai Li | | | |
| **Project Title** | | Quadcopter System Reachitect | | | |
| **Supervisor** | | Dr Luke Seed | **Second Marker** |  | |

**Brief Description of Project:**

*Give a couple of sentences to introduce your project and the topic area.*

**Main Component Headings:**

*Identify the main component headings (e.g. literature review) and label them with numbers or letters. Insert the labels in the left hand column of the Gantt chart and draw bars to indicate the projected time span of each component in weeks. This is just a suggested template and you may use your own Gantt chart design. A common mistake here is to not give enough detail. i.e. having just three components of Research, Design, Test shows that you have not given sufficient thought to the execution of the project.*

**Time-chart (use as a bar chart in conjunction with the main headings above)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Component | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Literature Review and get familiar with the software environment | x | x | x | x | x |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Board testing |  |  |  | x | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Design of system |  |  |  |  | x | x | x | x | x | x | x | x | x | x |  |  |  |  |
| Software Implementation |  |  |  |  |  |  |  | x | x | x | x | x | x | x | x | x | x | x |
| Testing of system |  |  |  |  |  |  |  | x | x | x | x | x | x | x | x | X | X | X |
| Documentation Writing |  |  |  |  | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Project Specification**

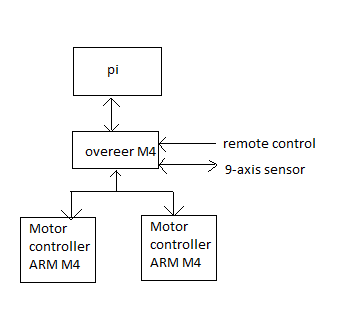
*This is the specification for your project. At the end of the project, your achievement will be marked against it.*

*BEng: Design Specification*

*MEng: Specification of aims and objectives*

*The specification should be produced with the help of your supervisor. The specification should contain enough detail for another person to carry out the work having read it. It should not contain descriptions of any required theory.*

*Report1 will not be marked unless your supervisor has completed the section below. The report will simply be returned to you for completion and may then have a late submission penalty. It is up to you to check that your supervisor is available to sign before the submission deadline.*



In this project, to progress an Unmanned Aerial Vehicle, based on the previous project carried out by Matthew Watson, it is vital to free up the top raspberry pi to run an advanced program to achieve unmanned flying and move the controlling program from the top raspberry pi to the middle overseer. The overseer needs to run the control program, getting the data from remote control, sensors and passing commands to the bottom two ARM M4 to control motors, and therefore the quadcopter can fly without the raspberry pi on the top and controlled by the remote control. At last, it is still necessary to keep the SPI between the overseer and the raspberry pi to further project to achieve unmanned flying where the raspberry pi tells the quadcopter what to do in high level terms.

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| **FOR COMPLETION BY SUPERVISOR** | |
| Does the project require ethical approval? As with PGR projects you must obtain ethical approval if required. For more information see: https://www.shef.ac.uk/ris/pgr/code/ethical | YES NO  Delete as applicable |
| I agree that this specification is of a satisfactory standard for the student to continue with the project.  Supervisor’s Signature: Date: | |