| | Task | | Assignment | Duration | 15 week | | | | | | | | | | | | | | | | | Rủi ro<br>Chủ quan/Khách quan | Chậm tiến độ | Biện pháp | Ghi chú | Công việc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | | | | |
| 1 | GENERAL LAYOUT DESIGN | | | | 1. GENERAL LAYOUT DESIGN | | | | | | | | | | | | | | | | | | | | | 2 |
| 1.1 | Localization | | Thanh | 1/1 | 22/12 | | | | | | | | | | | | | | | | | | | | | 2.1 |
| 1.2 | Perception | | Lộc | 1/1 | 22/12 | | | | | | | | | | | | | | | | | | | | | 2.2 |
| 1,3 | Planning | | Châu | 1/1 | 22/12 | | | | | | | | | | | | | | | | | | | | | 2,3 |
| 1,4 | Control | | Chí | 1/1 | 22/12 | | | | | | | | | | | | | | | | | | | | | 2,4 |
| 1,5 | Simulator | | Thanh | 1/1 | 22/12 | | | | | | | | | | | | | | | | | | | | | 2,5 |
| 2 | DETAILED DESIGN | | | | 2. DETAILED DESIGN | | | | | | | | | | | | | | | | | | | | | 3 |
| 2.1 | **Localization** | | | | | | | | | | | | | | | | | | | | | | | | | 3.1 |
| | 2.1.1 | Data processing from GPS | Thanh | 27/1 | | | 12/1 | | | | | | | | | | | | | | | | Thấp | | | |
| | 2.1.2 | Data processing from IMU | Thanh | 26/1 | | | 13/1 | | | | | | | | | | | | | | | | Thấp | | | |
| | 2.1.3 | Data processing from Encoder | Châu | 27/1 | | | 15/1 | | | | | | | | | | | | | | | | Thấp | | | |
| 2.2 | **Perception** | | | | | | | | | | | | | | | | | | | | | | | | | 3.2 |
| | 2.2.1 | Design Object Detection Algorithm | Lộc | 24/1 | | | 10/1 | | | | | | | | | | | | | | | | Thấp | | | |
| | 2.2.2 | Design Lane Detection Algorithm | Lộc | 29/1 | | | | 20/1 | | | | | | | | | | | | | | | Thấp | | | |
| 2.3 | **Planning** | | | | | | | | | | | | | | | | | | | | | | | | | 3.3 |
| | 2.3.1 | Designing a car following algorithm adjacent nodes | Châu | 20/1 | | 8/1 | | | | | | | | | | | | | | | | | Thấp | | | |
| | 2.3.2 | Designing an algorithm to go through all the nodes (Greedy) [input: any nodes, output: path shortest path through all nodes] | Châu | 20/1 | | 8/1 | | | | | | | | | | | | | | | | | Thấp | | | |
| 2.4 | **Control** | | | | | | | | | | | | | | | | | | | | | | | | | 3.4 |
| | 2.4.1 | Calib Servo | Lộc-Thanh | 1/2 | | | | 20/1 | | | | | | | | | | | | | | | Thấp | | | |
| | 2.4.2 | Using BFMC Embbeded source | Thanh | 1/2 | | | 14/1 | | | | | | | | | | | | | | | | Thấp | | | |
| 2.5 | **Simulator** | | | | | | | | | | | | | | | | | | | | | | | | | 3.5 |
| | 2.5.1 | Prepare virtual data from the Gazebo platform | Thanh | 28/1 | 2/1 | | | | | | | | | | | | | | | | | | Thấp | | | |
| | 2.5.2 | How to export data so that embedded computers can use it | Thanh | 2/1 | 22/12 | | | | | | | | | | | | | | | | | | Thấp | | | |
| 3 | DETAILED PROCESSING | | | | 3. DETAILED PROCESSING | | | | | | | | | | | | | | | | | | | | | 4 |
| 3.1 | **Localization** | | | | 3.1. Localization | | | | | | | | | | | | | | | | | | | | | 4.1 |
| | 3.1.1 | - Write code to transmit data from IMU to embedded computer | Thanh | 26/1 | 22/12 | | | | | | | | | | | | | | | | | | Thấp | | | |
| 3.2 | **Perception** | | | | 3.2. Perception | | | | | | | | | | | | | | | | | | | | | 4.2 |
| | 3.2.1 | - Camera calibration (Anti-distortion) | Lộc | 10/1 | 8/1 | | | | | | | | | | | | | | | | | | Thấp | | | |
| | 3.2.2 | - Stream camera to screen | Lộc | 31/1 | | | | 29/1 | | | | | | | | | | | | | | | Thấp | | | |
| | 3.2.3 | - Apply algorithm to raspi 5 | Lộc | 1/2 | | | | 30/1 | | | | | | | | | | | | | | | Thấp | | | |
| 3.3 | **Planning** | | | | 3.3. Planning | | | | | | | | | | | | | | | | | | | | | 4.3 |
| | 3.3.1 | Car code sticks to adjacent nodes (basic) | Thanh | 24/1 | 22/12 | | | | | | | | | | | | | | | | | | Thấp | | | |
| | 3.3.2 | The code is based on the algorithm of going through all the input nodes (Greedy) | Châu | 20/1 | | | 14/1 | | | | | | | | | | | | | | | | Thấp | | | |
| | 3.3.3 | Code from the event handling algorithm | Châu | 25/1 | | | 15/1 | | | | | | | | | | | | | | | | Thấp | | | |
| 4 | DETAIL INSPECTION | | | | 4. DETAIL INSPECTION | | | | | | | | | | | | | | | | | | | | | 5 |
| 4.1 | **Localization** | | | | 4.1. Localization | | | | | | | | | | | | | | | | | | | | | 5.1 |
| | 4.1.1 | Check the accuracy of the IMU, by rotating around fixed axes | Thanh | 12/1 | 22/12 | | | | | | | | | | | | | | | | | | Thấp | | | |
| 4.2 | **Perception** | | | | 4.2. Perception | | | | | | | | | | | | | | | | | | | | | 5.2 |
| | 4.2.1 | Check the accuracy of the Object Detection algorithm on video | Lộc | 21/1 | | | | 20/1 | | | | | | | | | | | | | | | Thấp | | | |
| | 4.2.2 | Test the algorithm through pi camera | Lộc | 2/2 | | | | | 26/1 | | | | | | | | | | | | | | Thấp | | | |
| 4.3 | **Planning** | | | | 4.3. Planning | | | | | | | | | | | | | | | | | | | | | 5.3 |
| | 4.4.1 | Vehicles follow adjacent nodes [Simulating] | Châu | 20/1 | | 13/1 | | | | | | | | | | | | | | | | | Thấp | | | |
| | 4.4.2 | Enter any node -> the car runs to eat running out of nodes [Simulating] | Châu | 20/1 | | 13/1 | | | | | | | | | | | | | | | | | Thấp | | | |
| 5 | OVERALL INSPECTION | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 5.1 | Check the correct operation between the real vehicle and the environment simulation field | | | 1/2 | | | | | | | | | | | | | | | | | | | Thấp | | | 6.1 |
| 5.2 | Test the object and lane detection function via the image stream screen from the camera | | | 1/2 | | | | | | | | | | | | | | | | | | | Thấp | | | 6.2 |
| 6 | OVERALL INSPECTION IN REAL WORLD | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 6.1 | Compare results against technical requirements | | | 2/2 | | | | | | | | | | | | | | | | | | | Thấp | | | 7.1 |