**CG1112 Engineering Principle and Practice**
Semester 2 2020/2021

# "Alex to the Rescue"
# Final Report
# Team: XX-YY-ZZ

<Remember to save this report as XX-YY-ZZ.docx, where XX-YY-ZZ is your project team number>

<Give the main role you played during the project.>

| Name | Student # | Main Role |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

<Remove this in actual report>

Note the following typographical guidelines:

- Use at least 1.15 line spacing.
- Font size = 12 pt
- Maximum number pages = 12 pages (excluding cover, references and appendices)

The main aim of this report is to document your final product. Aim to give a succinct and clear account of your approaches and decisions.

</Remove this in actual report>

## Section 1 Introduction

<Remove this in actual report>

Please give:

1. A short (at most ½ page) introduction to the "search and rescue" problem that Alex is designed to tackle.

</Remove this in actual report>

## Section 2 Review of State of the Art

<Remove this in actual report>

Give the **updated version** of this section from your design report. The guidelines are duplicated below for your reference:

---

Before embarking on a project, we need to know the state of the art. Sometimes, you may even find that the problem has already been addressed!

Give the following for **TWO tele-operating** search and rescue robotic platforms:

a. Simple description of the system, focus on the functionalities, hardware / software component.
b. Summary of strength and weakness.

**We expect no more than 1 page of information in total** for this section. You can include photos / diagrams if appropriate.

---

</Remove this in actual report>

## Section 3 System Architecture

<Remove this in actual report>

Please give:

2. A suitable diagram to illustrate the high level system architecture of the final system. You can **update** the diagram from the design report for this purpose.

</Remove this in actual report>

## Section 4 Hardware Design

<Remove this in actual report>

Please describe:

1. A photograph of the final form of the system. Try to indicate the placement of the hardware components on the photo if possible.
2. [Optional] Non-standard hardware components used and their purpose.
3. [Optional] Additional noteworthy hardware-related stuff you did

</Remove this in actual report>

## Section 5 Firmware Design

<Remove this in actual report>

Please describe:

1. High level algorithm on the Arduino Uno
2. Communication protocol (format of messages and responses).
3. [Optional] Additional noteworthy software-related stuff.

</Remove this in actual report>

## Section 6 Software Design

<Remove this in actual report>

Please describe:

1. High level algorithm on the Pi to handle:
    a. Teleoperation
    b. Color detection
2. [Optional] Additional noteworthy software-related stuff.

</Remove this in actual report>

## Section 7 Lessons Learnt - Conclusion

<Remove this in actual report>
Give two most important lessons learned in this project and the 2 greatest mistakes you made as a group.
</Remove this in actual report>

## References

<Remove this in actual report>
List all references here.
</Remove this in actual report>