**404: Team Not Found**

Engineering Notebook

**FRC#10496**



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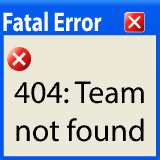
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# Team Members and Roles:

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| --- | --- |
| Mr Sinclair: Coach | A person in a suit and tie  Description automatically generated |
| Mr Ronnert: Coach | A person in a suit and tie  AI-generated content may be incorrect. |
| Joshua Kemp: Builder, CAD Designer, Driver | A child in a suit and tie  Description automatically generated |
| Nico Peters, Builder, Electronics | A child in a suit  Description automatically generated |
| Taku Reid, Programmer, Driver | A child in a suit and tie  AI-generated content may be incorrect. |
| Liam Burnett, Builder, Electronics | A child in a suit and tie  Description automatically generated |
| Oliver Kemp, Builder, Programmer | A child in a suit and glasses  AI-generated content may be incorrect. |
| Michael Taylor, Builder, Programmer | A person in a suit smiling  Description automatically generated |

# Team Overview:

Hello! We are FRC#10496 or 404: Team not Found. We are based in Sheldon college in Brisbane, Queensland. After competing for 3 years in FTC we have now stepped up with this being our first year in FRC. All our members have a passion in engineering, programming and robotics. With a small team like ours it means that we all know everyone very closely. With most of us wanting to peruse careers in engineering and Computer science fields we find competing in these competitions is the first step in our dreams.

Our team works within Sheldon college’s robotics labs that consist of a battalion of industrial 3d printers, 2 top of the line laser cutters, a CNC machine, and a wood working workshop.

# Strategy

During the initial kickoff event we were all on holidays discussing the event over our team’s discord group chat. We became creating ideas online and sharing our excitement for the months ahead. We got invited to return to school a week early to start the planning of our robot for this year where we took notes on the:

* Rules
* Robot Ideas
* Parts
* Game Strategy
* Team Name Ideas

After some in person discussions of we believe is best we realized we need something simple, semi-competitive, and a chassis we can build of for future years. To do this we ordered a kit-bot, which met our needs for a robot for this year. We carefully looked through the rules and noted down any important rule we would need to remember. We watched some other teams build videos and their ideas, then we developed our game strategy. We also discussed some team names for this year and settled on 404: Team not Found. When discussing game strategy, we reviewed the video and the design of the kitbot. In experience from other robotics competitions we knew that a consistent scoring robot is the best. We decided we would quickly load coral into the robot drive to the reef and drop it off, then repeat.

# Robot Design: Chassis

As a group we knew we needed a high-speed simple chassis for our first year. To do this we used tank drive which is a simple drive system that makes it both easy to code and to build. As we built the chassis, we all learnt important skills that we could carry on into future seasons and into life after school. In the building of the chassis, we also learnt important skills in CAD prototyping and using Adobe Illustrator to design parts for our robot.

# A black and white sign with a red border AI-generated content may be incorrect.A white rectangular object with pink dots AI-generated content may be incorrect.Robot Design: Delivery Systems

The delivery systems were where we really learnt how to use CAD and prototype. We used T-Slot Chanel so we could quickly adapt parts to fit it. We learnt to 3D print gear, laser cut logos and learnt to laser cut parts for our robot. With most of the delivery system using large acrylic panels, we learn how to design parts that fit the t-slot while keeping their strength. We learnt the importance of prototyping and using carboard before cutting the final design first.

# Robot Design: Electronics

As this was our first year and moving up from FTC the new electronics was overwhelming for most of us. Despite this after hours of YouTube tutorials and studying documentation most of us now have a solid understanding in how each and every component works. All the components we are using come in the Kit-Bot we purchased. This means that there was plenty of documentation and tutorials on the parts we had. After the completion of building the robot, we eventually wired it up, blew a few fuses and fixes some bad wiring.

# Programming

With our best programmers Taku and Oliver, we had little problems. Despite this there were multiple instances of motors not working, spinning the wrong way, or moving for too long. Although these problems are nothing some hard work and YouTube tutorials can’t fix. Shortly after the robot was in a driving state and after months of work building, we finally saw our robot driving smoothly across the floor. After the Tele-op was finished, we began working of autonomous. This consisted of making many calculations and considering the rolling of the robot. After this was completed, we felt confident in the robot’s programming.

# Community

Due to the time restraints, we didn’t get to do what we would have wanted and go out into the community. Despite this we have still made efforts to bring people into the hobby and help younger students in their robotics related events. In fact, some of the members in our team were not part of any robotics team before the start of this year. For example, Taku was passionate about robotics at home but after a short tour of what we were doing he was immediately hooked. He has now become our best programmer and is one of the most passionate about robotics.

# Our Future

\This is our first year in FRC at Sheldon College. As we come into the competition we look to the future. We have more parts on their way to help build a more customized chassis for next year. This year is all about learning for the next years and building a strong foundation for the team. As we are a very small team, we also hope to pick up a few members along the way. We hope we can build a team identity and become a force to be reconned with in future years. The whole team is honored to be part of this, and we are happy to be budling the foundations for a team that can compete with the best.