Team 1241 Suggested Team Structure

On Team 1241, we pride ourselves on being an inclusive team that treats every member like family. Every year we host approximately 40 students along with 15+ mentors. To ensure our ability to accept every student with a passion to join, we aim to provide them with a clear cut layout of how the team is structured. Similarly, we maintain such a high mentor count by ensuring each mentor feels valued and has their own role on the team. The team has benefited largely from creating our team structure and we want to share it with the FIRST world in hopes that it will help other teams as much as it has helped us. Please note that the following structures can be adapted as you see fit, if you have any questions or need help putting your own team structure together, feel free to contact our team at 1241robotics@gmail.com. We would love to help your team find the perfect structure based on your needs and student/mentor count!

Team Structure for teams with 10 students & 1-2 mentors

- Design Subgroup
    - 4 students; one student per subgroup (drivetrain, intake mechanism, main appendage (ex: shooter), end game mechanism)
    - The one student responsible for drivetrain should also be responsible for integration of the final CAD
- Mechanical Subgroup:
    - 3-4 students; each mechanical student should be assigned a subsystem and they should work hand in hand with the designer to ensure proper manufacturing of the components
    - Once each subsystem has been manufactured and assembled, all the students can work together to ensure the full assembly of the robot has been done
- Controls Subgroup:
    - 2-3 students; each controls student should also work hand in hand with the designers to ensure all sensors and hardware have been accounted for during the design phase
    - Out of these 2-3 students, one should be responsible for wiring and one should be responsible for programming, additional students can be hybrids and help with both wiring and programming
- One mentor should be allocated to overseeing the design/mechanical teams and the other mentor should be in charge of overseeing the controls team

Team Structure for teams with 20-25 students & 3-6 mentors

- Design Subgroup:

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    - 8 students; two students per subgroup (drivetrain, intake mechanism, main appendage (ex: shooter), end game mechanism)
    - 2 students, if available will be responsible for the overseeing of all CAD work and integration of the final CAD
    - 1-2 mentors should be responsible for managing the design process and CAD work of the students. Preferably 1 mentor would be responsible for drivetrain, intake and integration. The other mentor would be responsible for the main appendage and end game mechanism.
- Mechanical Subgroup:
    - 8-10 students; each pair of mechanical students should be assigned a subsystem and work hand in hand with the designers to ensure proper manufacturing of the components
    - Once each subsystem has been manufactured and assembled, all the students can work together to ensure the full assembly of the robot has been done
    - 1-2 mentors should be responsible for managing the fabrication and assembly of the robot. Preferably 1 mentor would be responsible for the drivetrain and intake while the other mentor would be responsible for the main appendage and end game mechanism. Both mentors would then help out to ensure the robot is assembled as required.
- Controls Subgroup:
    - 4-5 students; each controls student should also work hand in hand with the designers to ensure all sensors and hardware have been accounted for during the design phase
    - Out of these 4-5 students, two should be responsible for wiring and two should be responsible for programming, additional students can be hybrids and help with both wiring and programming
    - 1-2 mentors should be responsible for managing the wiring and programming of the robot. Preferably one mentor would be allocated to wiring, the other to programming.

Team Structure for teams with 30+ students & 7+ mentors

- Design Subgroup:
    - 8 main students; two students per subgroup (drivetrain, intake mechanism, main appendage (ex: shooter), end game mechanism)
        - An additional 4 students should be used to help support the main CAD team, one per subsystem

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    - 2 main students, will be responsible for the overseeing of all CAD work and integration of the final CAD
        - An additional 1 student should be used to help support the main CAD integration team
    - 3-4 mentors should be responsible for managing the design process and CAD work of the students. Preferably 1 mentor per subsystem, with the mentor for the drivetrain also working as the mentor to ensure proper integration of subsystems
- Mechanical Subgroup:
    - 8-10 main students; each pair of mechanical students should be assigned a subsystem and they should work hand in hand with the designers to ensure proper manufacturing of the components
        - An additional 5 students should be used to help support the fabrication of each component
    - Once each subsystem has been manufactured and assembled, all the students can work together to ensure the full assembly of the robot has been done
    - 2-3 mentors should be responsible for managing the fabrication and assembly of the robot. Preferably 1 mentor would be responsible for drivetrain and intake while the other mentor would be responsible for the main appendage and end game mechanism. The third mentor should ensure the proper assembly of the final robot.
- Controls Subgroup:
    - 4-5 main students; each controls student should also work hand in hand with the designers to ensure all sensors and hardware have been accounted for during the design phase
    - Out of these 4-5 students, two should be responsible for wiring and two should be responsible for programming, the fifth student should be used as a hybrid who has reasonable knowledge in both wiring and programming
        - An additional 2-3 students should be used to support the main controls team, preferably 1 student on wiring, 1 student on programming and 1 student acting as a hybrid
    - 2-3 mentors should be responsible for managing the wiring and programming of the robot. Preferably 1 mentor would be allocated to wiring, 1 mentor to programming and the other mentor would work as a hybrid.

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Team 1241's Student/Mentor Layout

On Team 1241, our layout is similar to that of the last example. Our breakdown is as follows:

- Design:
  - 10 main students
  - 5 supporting students
  - 4 mentors
- Mechanical:
  - 10 main students
  - 8 supporting students
  - 4 mentors
- Controls:
  - 6 main students
  - 4 supporting students
  - 5 mentors
- Project Management:
  - 4 students
  - 2 mentors

As the competition season approaches, we further break down each major team into smaller sub-teams. This helps ensure everyone on the team has a dedicated role that they are responsible for. Below is a figure of our competition flow down, only including mentor names. Student names have been abolished from this list to maintain privacy.

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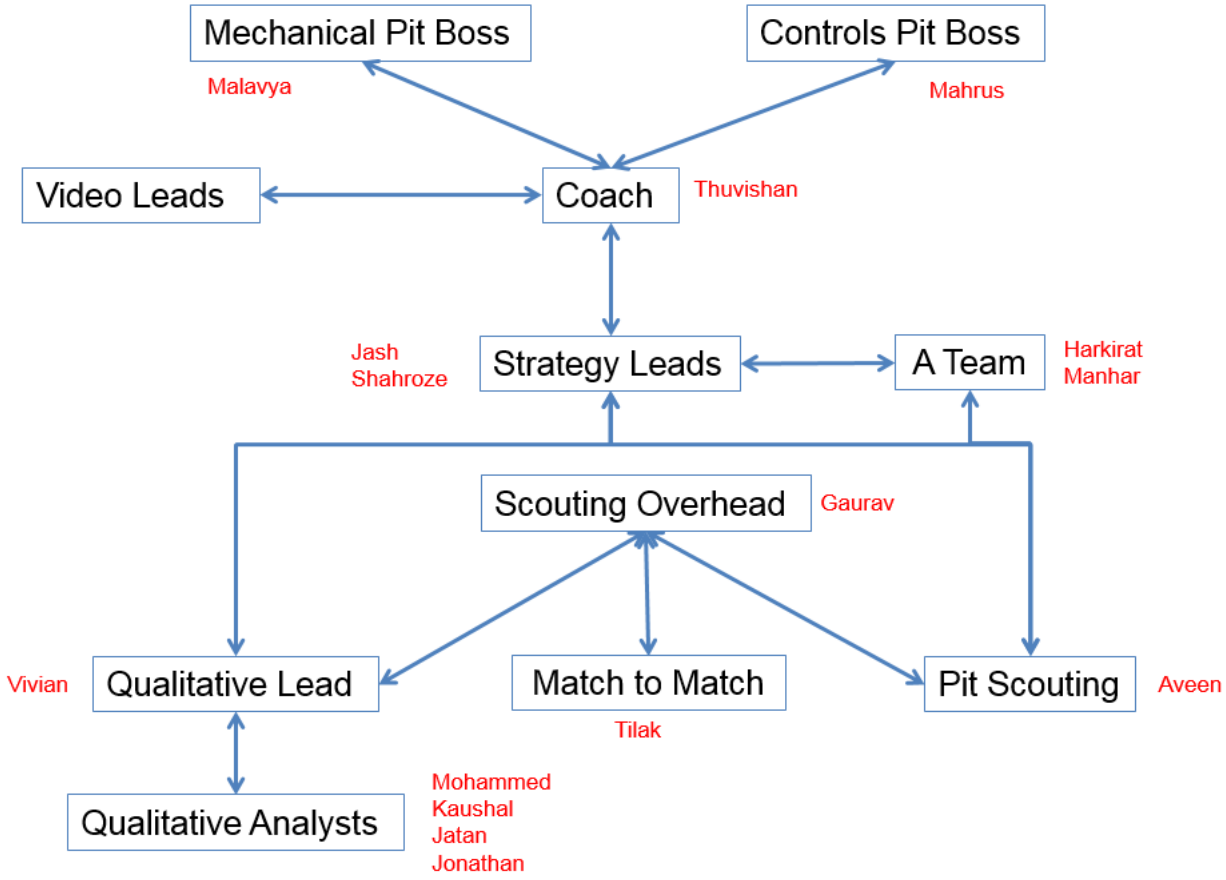
Competition Flow Down



Below are the descriptions of all the roles mentioned above.

- Mechanical/Controls Pit Boss – Manages the robot and students in the pit. Ensures the robot is out early before every game and functions as designed.
- Coach – Manages the drive team on and off the field, ensures they are comfortable prior to each match and the strategy delivered is executed to perfection.
- Video Lead – Records all the match videos and filters our match videos to the coach to ensure the drive team improve on their performance.
- Strategy Leads – Ensures data is collected from the scouting sub teams and formulates a winning strategy to obtain the most RP. Strategy is then delivered to alliance partners and coach.
- A-Team – Ensures the alliance robots are functioning as required. This is done by fixing any components that do not work/work well and ensures they have a working autonomous.

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- Scouting Overhead – Ensures all scouting sub divisions are being run effectively and solves any problems that occurs.
- Qualitative Lead – Ensures all the qualitative analysts are recording the required information. Coordinates the match data for 1241's matches to the strategy leads and determines pick list.
- Quantitative Lead – Ensures the data from the students is accurate and resolves any problems with the scouting app.
- Pit Scouting – Ensures all teams robot specifications have been recorded before Friday of competition. Once complete, aids in the qualitative scouting process.
- Qualitative Analysts – Records the qualitative data from each match and delivers it to the qualitative lead.