

Team 503 - Formula 1/10th Vehicle TopHat

Spring 2024 Project Plan

Tentative Date	Milestone	Tasks
January	Rapid Prototyping	Convert CAD to STL
		Prepare 3D Printer
		Assemble Prototype
January	Modify CAD Design	Review Design Requirements
		Discuss Problem Areas
		Refine CAD
January	Improved Prototype	Refine Model Based on Previous Error
		Redesign Model if Needed
		Simulate Loads
		3D print prototype
January	Test Prototype	Load Testing in X, Y, Z
		Collision Test
		Roll-Over Test
		FEA Analysis
		User-Handling Test
February	VDR4	Condense Previous Work
		Summarize Current Work
		Create Presentation Powerpoint
		Overlook Rubric
		Submit VDR4 Powerpoint
		Practice Presentation
		Present Presentation
February	Update Bill of Materials	Determine Main Components
		Vet vendors
		Record Changes

		Initial Order
February	Finalize CAD Drawings	Create CAD Drawings Annotate Dimensions Create Part Numbers Create CAD Assembly for Reference Export to PDF
February	Machining and Fabrication	CAD files provided to Machine Shop Provide Material to Machine Shop Receive Status Update on Machined Parts
February	Assembly	Look over CAD Models Examine Machined Parts Put together all components
March	Testing	Load Testing in X, Y, Z Collision Test Roll-Over Test FEA Analysis User-Handling Test
March	VDR5	Condense Previous Work Summarize Current Work Create Presentation Powerpoint Overlook Rubric Submit VDR4 Powerpoint Practice Presentation Present Presentation
		Outline Previous Work Outline Current Work Prepare Demonstration Submit VDR6 Powerpoint

April	Senior Design Day	Practice Presentation
		Present VDR6
		Prepare Poster
		Create Elevator Pitch
		Practice Elevator Pitch
		Present Poster
Network with Industry Professionals		
April	Finals	Prepare for Finals
		Take Finals
		Pass all Finals
May	Graduation	Prepare Cap and Gown
		Practice Graduation Walk
		Graduate on May 4, 2024

Description	Asignee
Ensure dimensions/parameters are appropriate	Aaron
Send to FabLab or personal printer. Select material.	Aaron
Post-process prints, assemble with fasteners.	Aaron
Compare targets and metrics with prototype performance	Kyle
Assess issues with current design	Team
Address problems by fixing CAD model	Adam
Use performance of past prototype to improve working model	Ja'Quan
Based on failures of prototype, rework any model parts that perform poorly	Alex
Perform a load simulation using a stress-analysis software	Kyle
Repeat Rapid Prototyping Steps	Aaron
Apply loads to physical prototype from all directions	Ja'Quan
Crash the car and observe what breaks	Ja'Quan
Perform a turn at top speed and observe roll stability	Ja'Quan
Use a simulation software to analyze loadcases	Alex
Handle the prototype roughly and observe what breaks/what is unergonomic	Adam
Condense previous presentations for sponsor and advisor into key points	Adam
Discern important information into key points for sponsor/advisor	Kyle
Insert important information into powerpoint format. Add visuals.	Team
Compare work produced with requirements in the assignment rubric	Ja'Quan
Finalize and submit presentation on Canvas	Alex
Create scripts/key points and run through presentation as a group	Aaron, Alex, Ja'Quan
Perform presentation and answer questions the advisor and TA's have	Aaron, Alex, Ja'Quan
Select key components from successful prototype design	Alex
Contact vendors for part availability/cost	Adam
Take note of any changes from vendors	Adam

Submit initial parts order to vendors	Adam
Draft a final CAD drawing for final design	Adam
Annotate dimensions on CAD drawing	Alex
Assign part numbers to individual components	Ja'Quan
Assemble all parts in CAD software for computer modeling	Adam
Create a PDF of final CAD assembly	Kyle
Send CAD file to Machine Shop for manufacturing	Aaron
Supply Machine Shop with materials from vendors	Adam
Check with Machine Shop on manufacturing progress	Aaron
Refer to CAD model before assembly	Alex
Inspect machined parts for defect	Aaron
Assemble components into the design	Kyle
Apply loads to physical prototype from all directions	Ja'Quan
Crash the car and observe what breaks	Kyle
Perform a turn at top speed and observe roll stability	Adam
Use a simulation software to analyze loadcases	Alex
Handle the prototype roughly and observe what breaks/what is unergonomic	Aaron
Condense previous presentations for sponsor and advisor into key points	Aaron
Discern important information into key points for sponsor/advisor	Kyle
Insert important information into powerpoint format. Add visuals.	Team
Compare work produced with requirements in the assignment rubric	Adam
Finalize and submit presentation on Canvas	Adam
Create scripts/key points and run through presentation as a group	Kyle, Adam
Perform presentation and answer questions the advisor and TA's have	Kyle, Adam
Discuss work done in previous presentations	Team
Discuss work done since prior presentations	Team
Set up demonstration of design capabilities	Team
Submit presentation on Canvas	Kyle

Create scripts/key points and run through presentation as a group	Team
Perform presentation and answer questions the advisor and TA's have	Team
Lay out and prepare visuals for poster	Team
Draft short summary of our project and what it does	Team
Create scripts/key points and run through presentation as a group	Team
Present poster and answer questions on Senior Design Day	Team
Form relationships with and send follow up contact to Industry Representatives	Team
Study and get enough sleep	Team
Take all final exams	Team
Perform well	Team
GRADUATE	Kyle, Alex, Adam, Ja'Quan
	Kyle, Alex, Adam, Ja'Quan
	Kyle, Alex, Adam, Ja'Quan