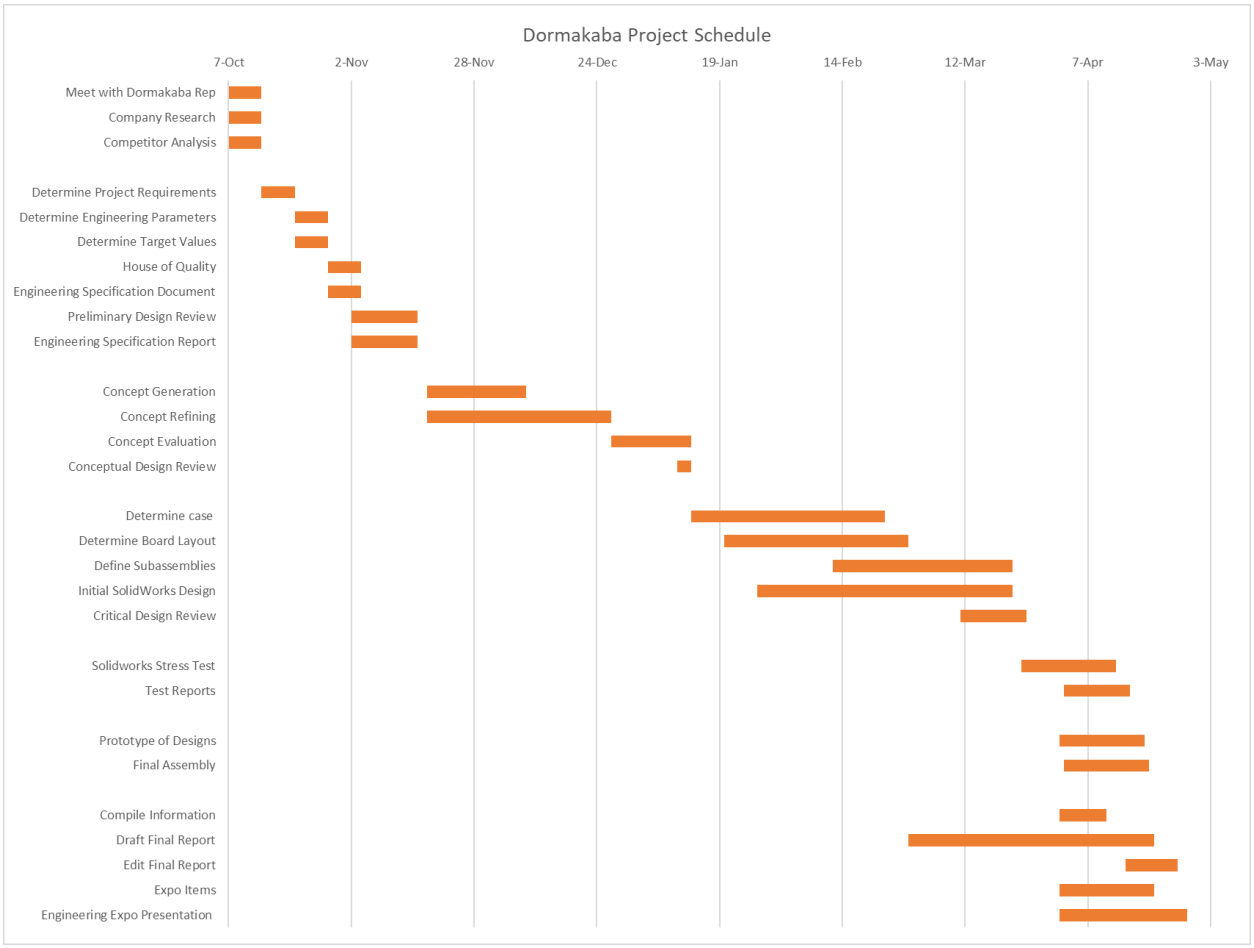
Project Plan:

Task #	Tasks	Subtask	Input	Task Action	Output	Resource :3	Progress	Solutions	Start date	End date	Duration
1	Project Research										
1.1		Meet with Dormakaba Rep	N/A	Gather general project requirements form the company Rep.	2.1: Project scope and product specifications	Project sponsor	100%	Solutions to possible problems or alternatives	7-Oct	14-Oct	7
1.2		Company Research	N/A	Gather additional project requirements	2.1: Learn company standards	Project sponsor	100%		7-Oct	14-Oct	7
1.3		Competitor Analysis	N/A	Analyze designs of current product/competeto	2.1: Learn industry standards and key parameters	Current sponsor or competitor lock designs	100%		7-Oct	14-Oct	7
2	Engineering Specification										
2.1		Determine Project Requirements	1.1, 1.2, 1.3	Determine the requirements needed to be met for a successful design	2.2: Size, shape, strenghth, and functions required by sponsor		100%		14-Oct	21-Oct	7
2.2		Determine Engineering Parameters	2.1	Transform the project requirements into suitable engineering parameters	2.3: Have a general scope and path forward to complete project		100%		21-Oct	28-Oct	7
2.3		Determine Target Values	2.2	Use market research to determine target values for engineering parameters	2.4: Use research and given specs to formulate house of quality		100%		21-Oct	28-Oct	7
2.4		House of Quality	2.3	Create House of Quality	2.5: Write a preliminary design reveiw and engineering specs		100%		28-Oct	2-Nov	7
2.5		Engineering Specification Document	2.4	Write Engineering Specification Document	2.6: Have initial specifications outlined and write spec report		100%		28-Oct	2-Nov	7
2.6		Preliminary Design Review	2.5	Present Engineering Specification Document to sponsor	2.7, 3.1: Recieve feedback from sponsor and be able to write spec report	Project sponsor	100%		2-Nov	18-Nov	14
2.7		Engineering Specification Report	2.6	Write Engineering Specification Report	7.1: Know the most important specs and be able to begin final report		100%		2-Nov	18-Nov	14
3	Conceptual Design										
3.1		Concept Generation	2.7	Brainstorm mechanical methods for acheiving desired motion from lock	Meet with dormakaba to discuss general direction of design		100%		18-Nov	9-Dec	21
3.2		Concept Refining	2.7	Brainstorm list of possible conceptual designs to present to Dormakaba	3.2: Have a list of possible solutions to narrow down to best one		100%		18-Nov	27-Dec	39
3.3		Concept Evaluation	3.1	Use a decision Matrix to evaluate the possible designs	3.3: Take best parts of each idea to choose the best		100%		27-Dec	13-Jan	17
3.4		Conceptual Design Review	3.2	Present chosen conceptual design to sponsor	4.1, 4.2, 4.3: Pick a design idea and begin designing to those specs	Project sponsor	100%		10-Jan	13-Jan	3
4	Modeling										
4.1		Determine case	3.3	Determine an initial design of the case	4.3, 4.4: Choose material, contours, lock mechanisms to determine bulk properties		100%		13-Jan	23-Feb	41
4.2		Determine Board Layout	3.3	Determine an initial design of the lock	4.3, 4.4: Choose materials and locking mechanisms to test		100%		20-Jan	28-Feb	39
4.3		Define Subassemblies	3.3	Define Subassemblies for Distribution of Workload	Solutions for Individual Subassemblies		100%		12-Feb	22-Mar	38
4.4		Initial SolidWorks Design	4.1, 4.2	Create a SolidWorks model of the lock and casing	The entire lock has been modeled in solidworks	Solidworks	100%		27-Jan	22-Mar	54
4.5		Critical Design Review	4.4	Finish the SolidWorks model, create CAD drawings of each part and form a BOM	Detailed review of the solidworks model	Solidworks	100%		11-Mar	24-Mar	14
5	Testing										
5.1		Solidworks Stress Test	4.3	Perform a FEA stress test in Solidworks to verify the design can withstand required load	5.3, 6.1: Write reports detailing the lock performance	Solidworks	100%		24-Mar	12-Apr	20
5.2		Test Reports	5.1, 5.2	Write test reports detailing the testing procedures	7.1: Have test data to add to final report and validate design		100%		2-Apr	15-Apr	14
6	Prototyping										
6.1		Prototype of Designs	5.1, 5.2	Send files to sponsor to create a prototype of the design	6.3: Create a prototye of the product and begin report	Solidworks	100%		1-Apr	19-Apr	18
6.2		Final Assembly	6.1	Assemble the lock within the casing	7.1: Assembled product and have a solid deliverable along with final report	Solidworks	100%		2-Apr	20-Apr	18
7	Final Report										
7.1		Compile Information	2.7, 3.4, 5.2, 6.2	Gather information from Engineering Specifications Report, Conceptual and Critical Design Reviews and Testing	7.2: Have all information from project compiled		100%		1-Apr	10-Apr	10
7.2		Draft Final Report	7.1	Write the first draft of the Final Report	7.3: Have all relevant info organized and presentable		100%		28-Feb	20-Apr	52
7.3		Edit Final Report	7.2	Edit the Final Report to produce a final copy	7.4: Have a final report to submit to sponsor and one to submit to instructors		100%		15-Apr	25-Apr	11
7.4		Expo Items	7.1	Create Brochure and Poster for Expo that the sponsors approve	Poster and brochure are ready for expo and approved by the sponsors	Machine Shop	100%		1-Apr	20-Apr	20
7.5		Engineering Expo Presentation	7.1, 7.4	Present the project at the Engineering Expo	Finished Project		100%		1-Apr	1-May	27

Changes to Project Plan:

10/16/22 Logged by LF	Changed the outputs from numbers to specific things. Start and end dates were updated to be more accurate.
12/1/22 Logged by LF	A task of conceptual refining was added to the conceptual design stage. Dates for that section were extended as we have a more accurate idea of how long it will take to come up with a design.
1/7/23 Logged by LF	Changed the dates of the Conceptual Design Stage (3.2, 3.3, 3.4) to be accurate with our progress.
1/16/23 Logged by LF	We got rid of the lock securty testing task because we will not be able to do any security tests. We added a design modificiation stage to testing section. We changed the maching lock stages (6.1 and 6.2) because we will not be machineing a lock but rather focusing more on making the Solidworks model and the CAD sketches within that model, finalized.
2/1/2023 Logged by LF	We got rid of the initial prototype task because we will not be making an actual prototype rather focusing more on making the Solidworks model and the CAD sketches within that model, finalized.
3/16/2023 Logged by LF	Updated the dates for the project to match the progess we have and will make.Added two sections, one for the Critical Design Review and another for creation of the brochier and postor for the Expo.
4/18/2023 Logged by LF	Changed the Prototyping section to Modeling and changes the final design to prototyping to more accurately describe the project.

Gantt Chart:


Dormakaba Project Schedule
7-Oct
2-Nov
28-Nov
24-Dec
19-Jan
14-Feb
12-Mar
7-Apr
3-May
Meet with Dormakaba Rep
Company Research
Competitor Analysis
Determine Project Requirements
Determine Engineering Parameters
Determine Target Values
House of Quality
Engineering Specification Document
Preliminary Design Review
Engineering Specification Report
Concept Generation
Concept Refining
Concept Evaluation
Conceptual Design Review
Determine case
Determine Board Layout
Define Subassemblies
Initial SolidWorks Design
Critical Design Review
Solidworks Stress Test
Test Reports
Prototype of Designs
Final Assembly
Compile Information
Draft Final Report
Edit Final Report
Expo Items
Engineering Expo Presentation