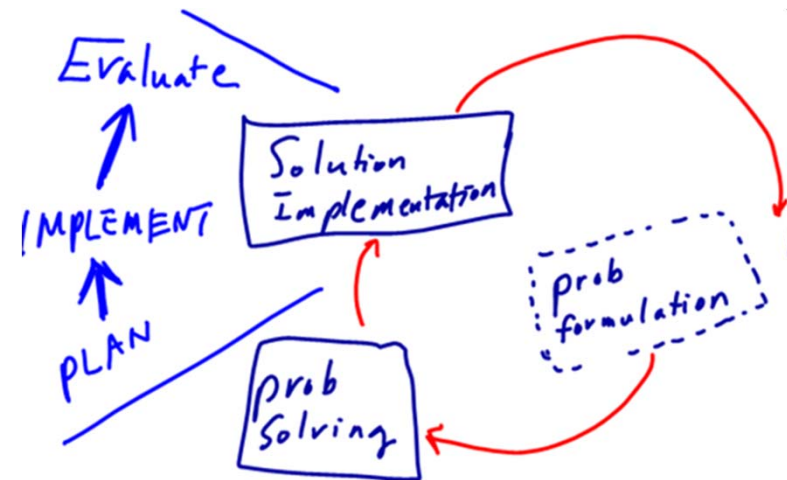


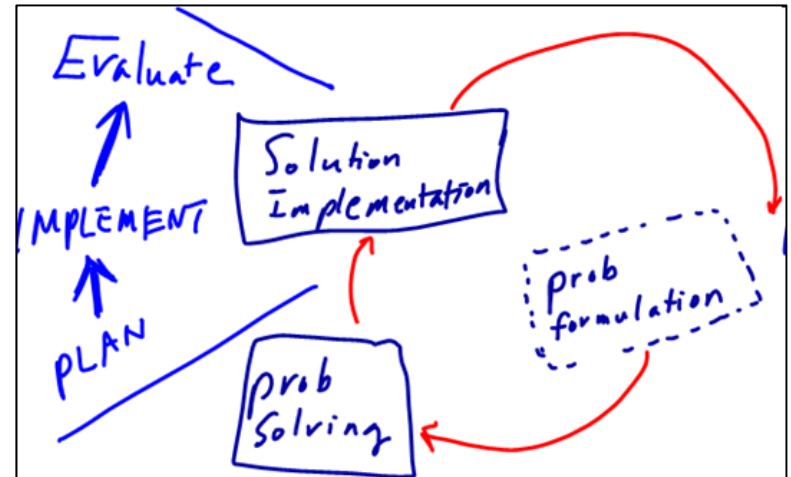
Senior Design II

- So far
 - Team Project
 - Problem Definition: Need
 - Design Requirements
 - Solution Design
- Also
 - Compliance to Regulation
 - Importance of Meeting Rules
 - Life-Long Learning



Paper Design to Reality

- Next Step
 - **Parts – Order**



- **Implement and Make !!!**

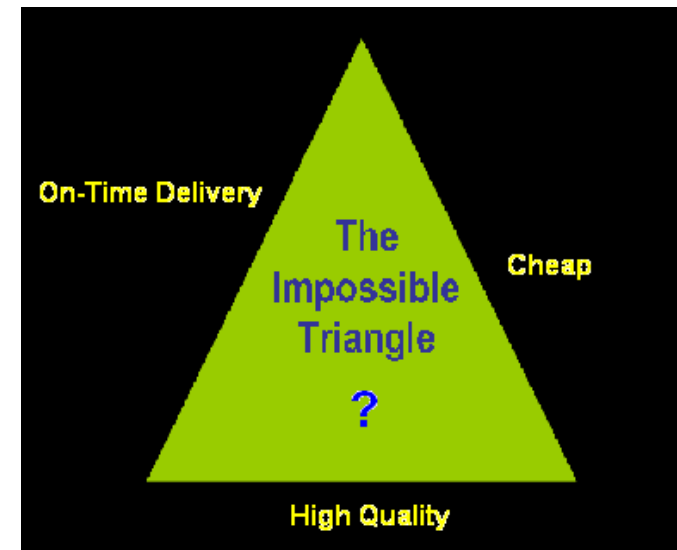
Paper Design **Into Reality**

Refresh and Continue our design process

- Senior Design II Spring 2019 (FOCUS)
 - Plan for Implementation
 - Bi-Weekly Progress: Report and Presentation
 - Engineering Ethics: Essay Writing
 - Elevator Pitch
- Grading
 - Individual (30): Essay (10%) + Elevator Pitch (10%) + Final Exam (10%)
 - Group/Team (70): Progress Report (x3) (15%)+ Progress Presentation (x3) (15%) + Implementation Status (x3) (15%) + Final Demonstration and Presentation (25%)
 - Peer Evaluation
 - Extra +5 for On-Time Arrival Tally
 - Total: Individual + Team * Peer + Extra

1. Implementation Planning

- Clarification on team's ()
- Steps of Solution Implementation
- Consideration for Implementation Planning
- 3 C's for Project Success - Implementation
 - ()
 - ()
 - ()
- QCD for Project Success: Key performance indicator
 - We go by
 - **DQC: D() – Q()**
 - **C()**



PLAN

- **What's Involved**

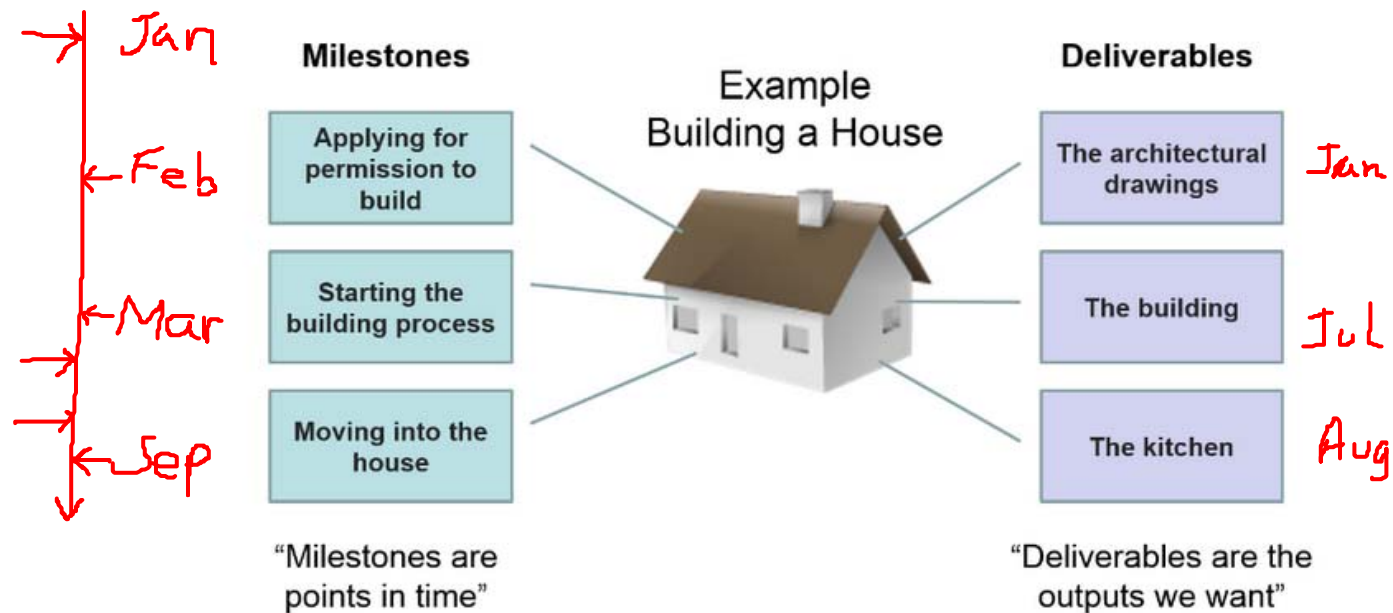
- The Final Product of the Project
- Milestones and Deliverables for “Academic Year product for Demonstration”
- Conversion of Paper Design into Reality
- Make sure the implemented design meets the design requirements (“Quality”)
- Efficient Process to do the work (“Delivery”)

- **PLAN**

- “A road map to a goal”
 - Outline the navigation route (from Today to the End of the project)
 - Coordinate efforts to achieve Milestones and the Final Goal
- Manage the key resources
 - Time
 - Personnel

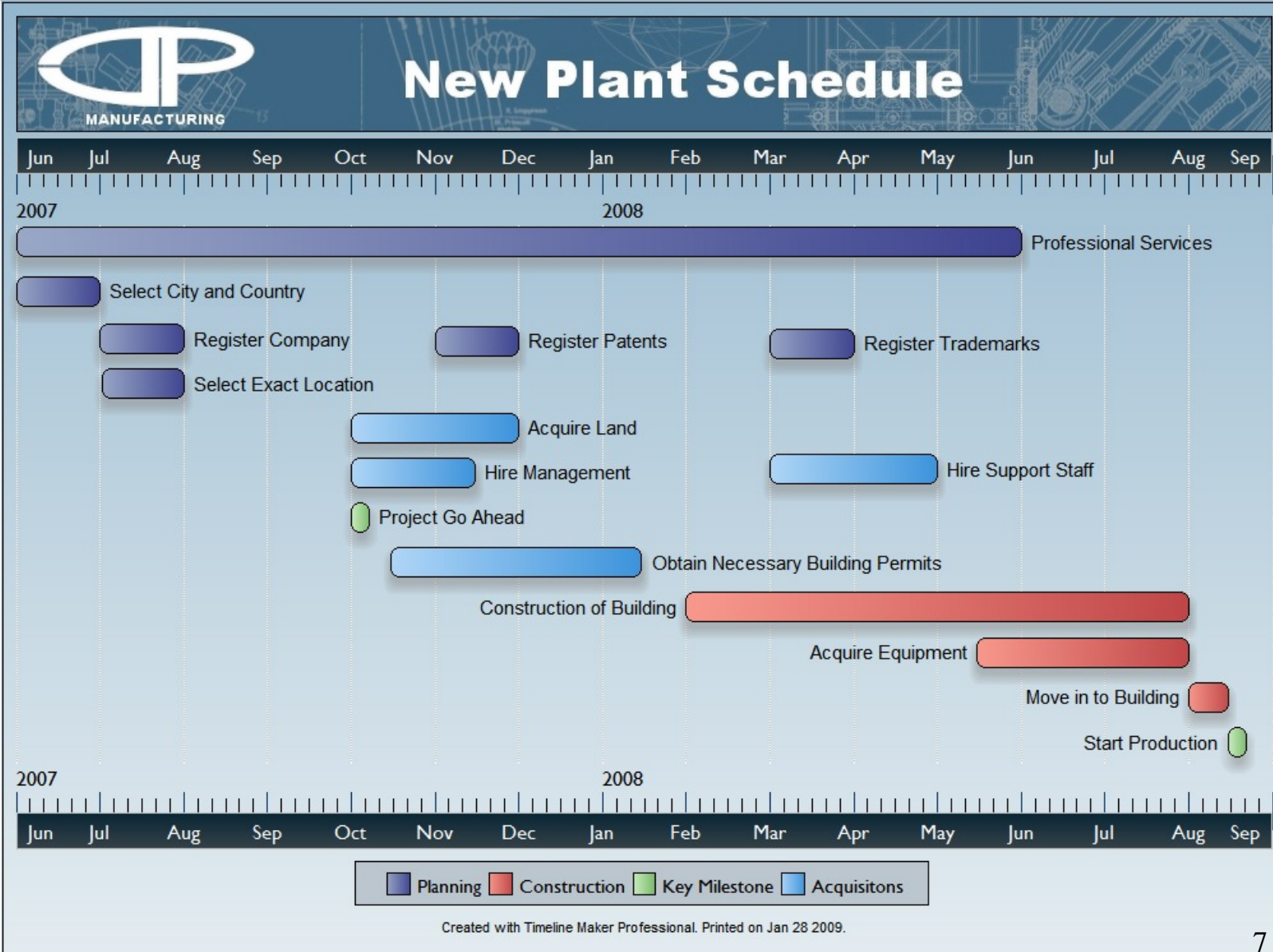
Project Milestones & Deliverables: Motivation

Deliverables & Milestones



Project Milestones and Deliverables Example

<https://www.timelinemaker.com/samples/product-samplecharts-milestones.html>

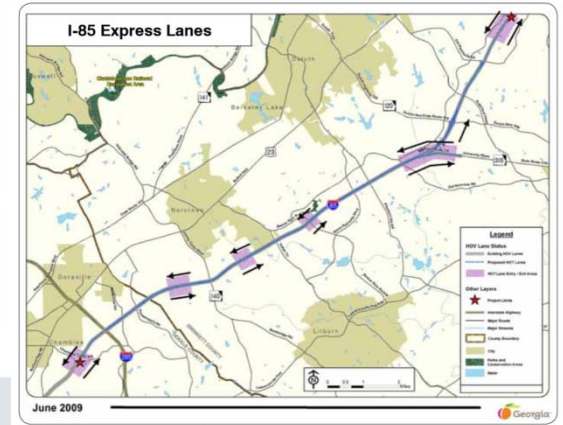


Project Milestones and Deliverables Example

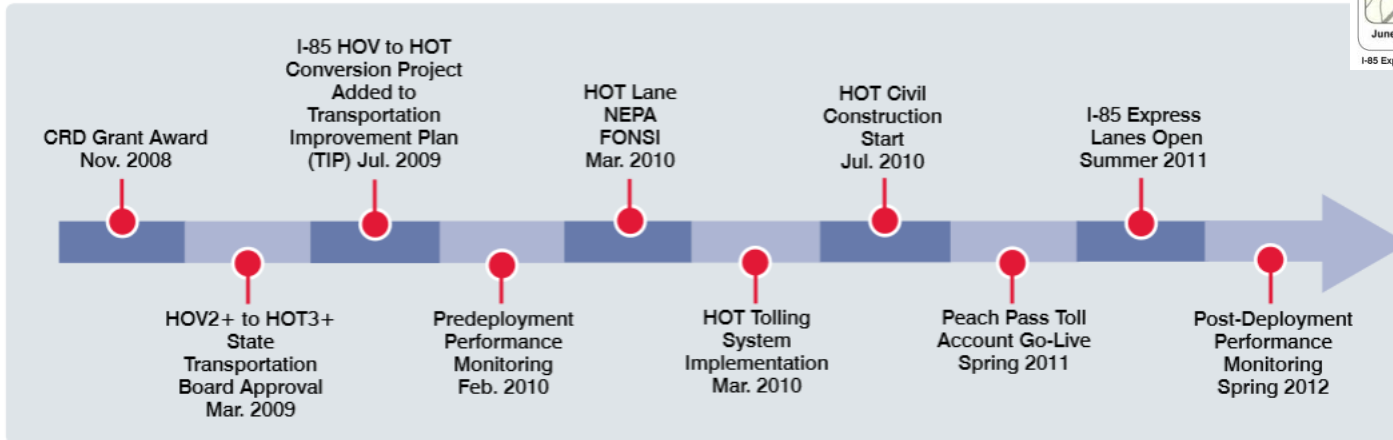


[Home](#) > [Federal Programs](#) > [Congestion Reduction Demonstrations](#) > [Atlanta](#)

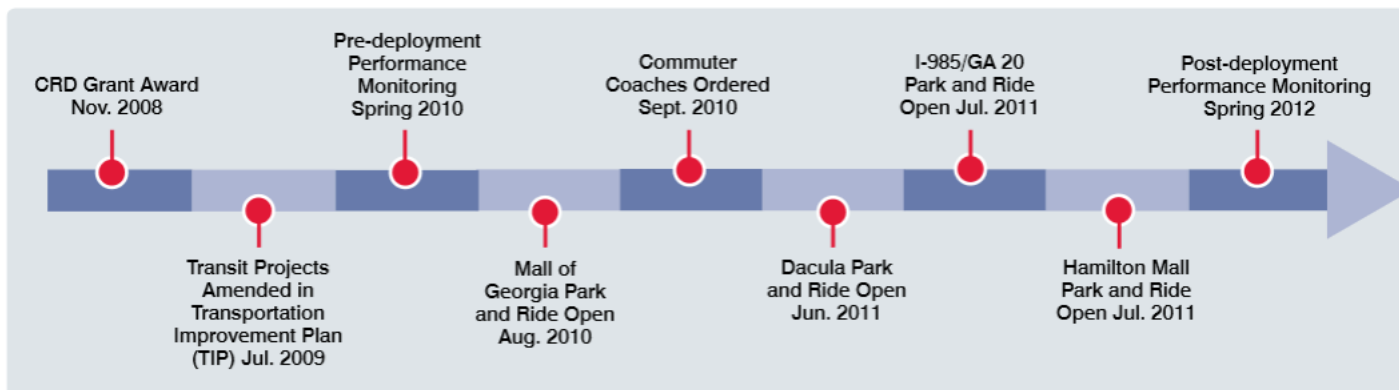
UPA/CRD Annual Report Atlanta I-85 Express Lanes and Transit Projects



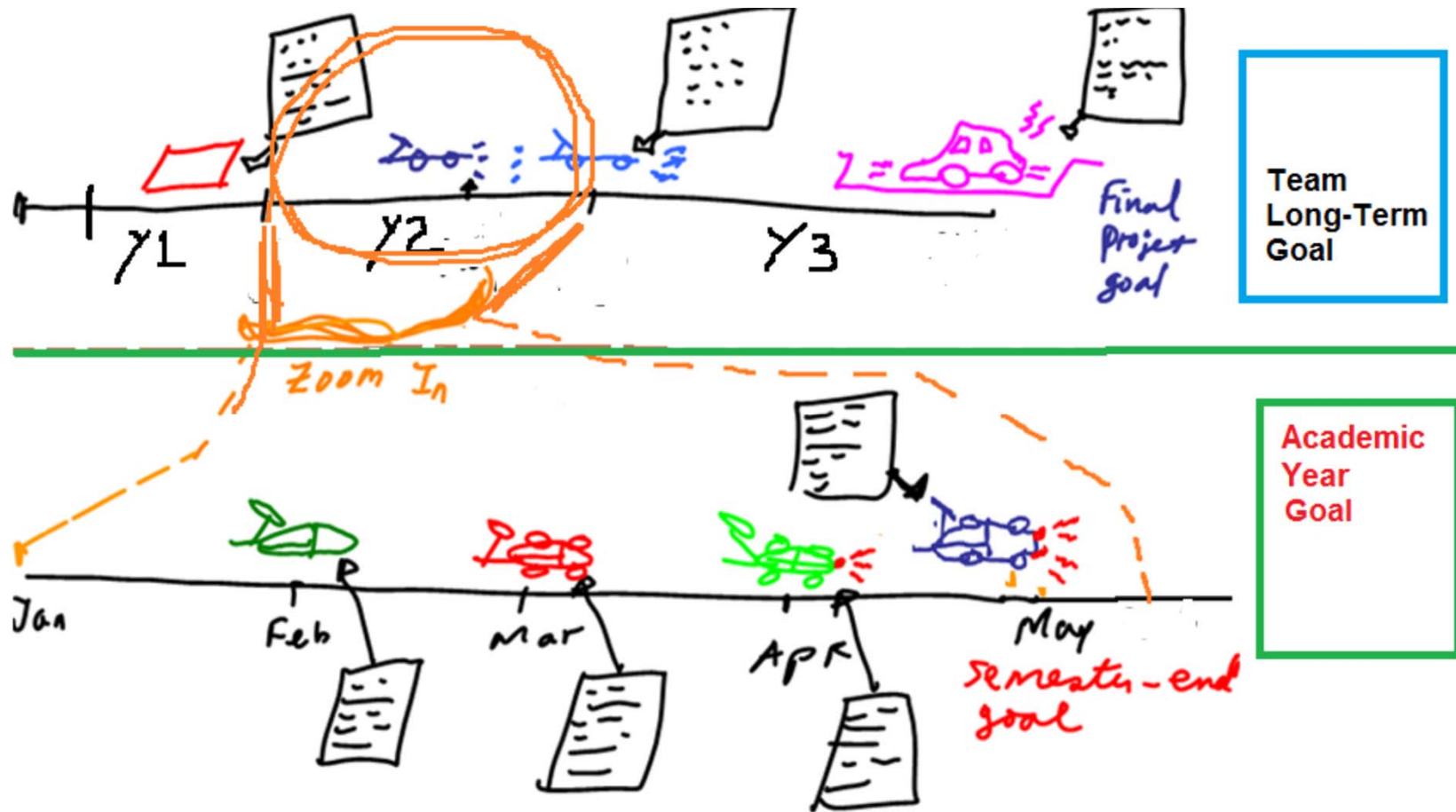
Timelines



I-85 Express Lanes milestones



HOW TO MAKE OUT Project Milestones and Deliverables for Final Product and for Semester-End Demo Product



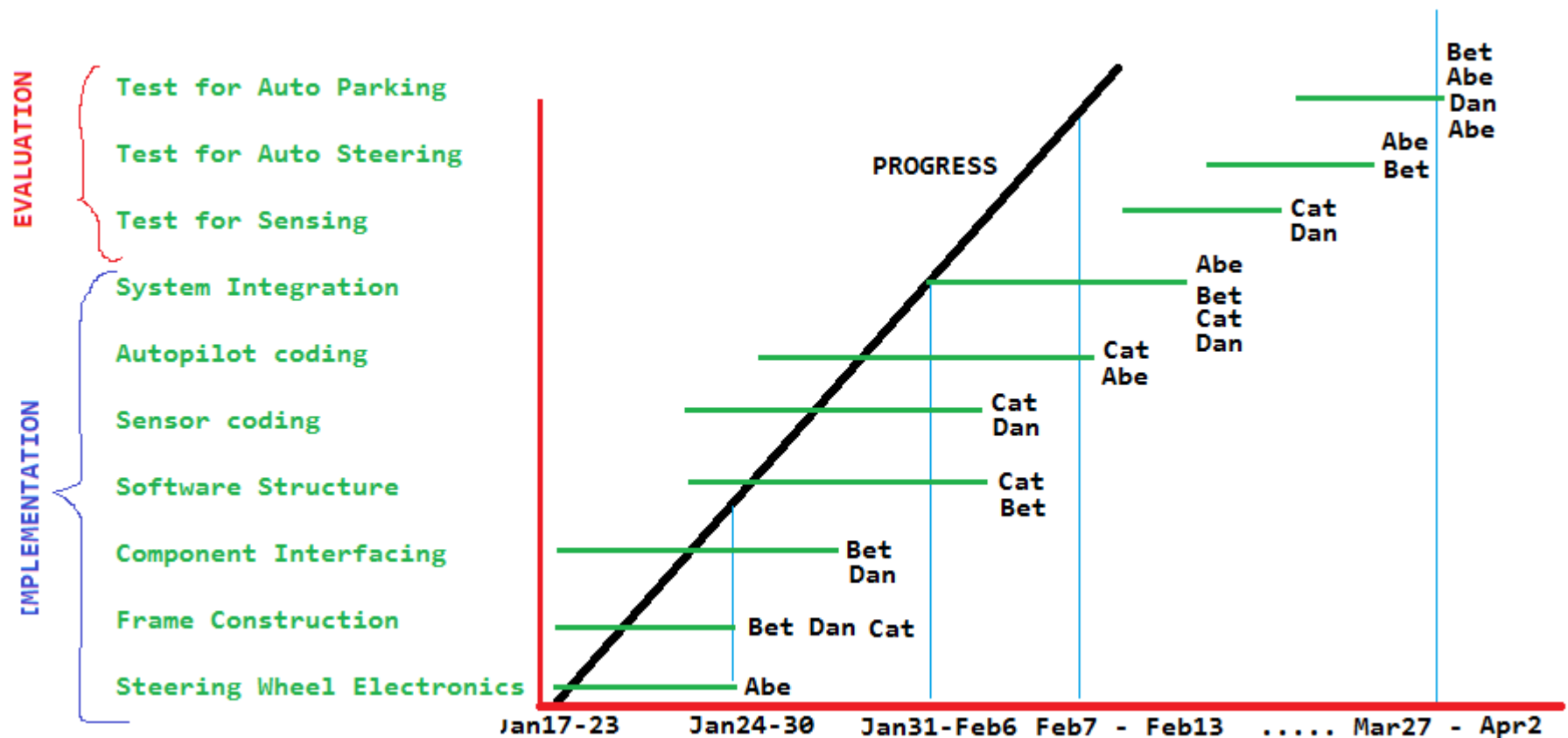
Implementation Planning (Details)

- **DETAIL**
 - You should be very detailed with your plan
 - Instead of “construction”
 - Breakdown to much smaller tasks;
 - “order motor”, “manufacture brackets”, “align optical components”
 - Instead of “Coding”
 - Breakdown to much smaller modules;
 - “video module A”, “homing subroutines”, “collision avoidance algorithm”,
 - Timeline (**From Monthly to Weekly** in the Milestones)
 - Tools and Methods used in Implementation Plan
 - Gant Chart
 - Spreadsheet
 - Project Calendar

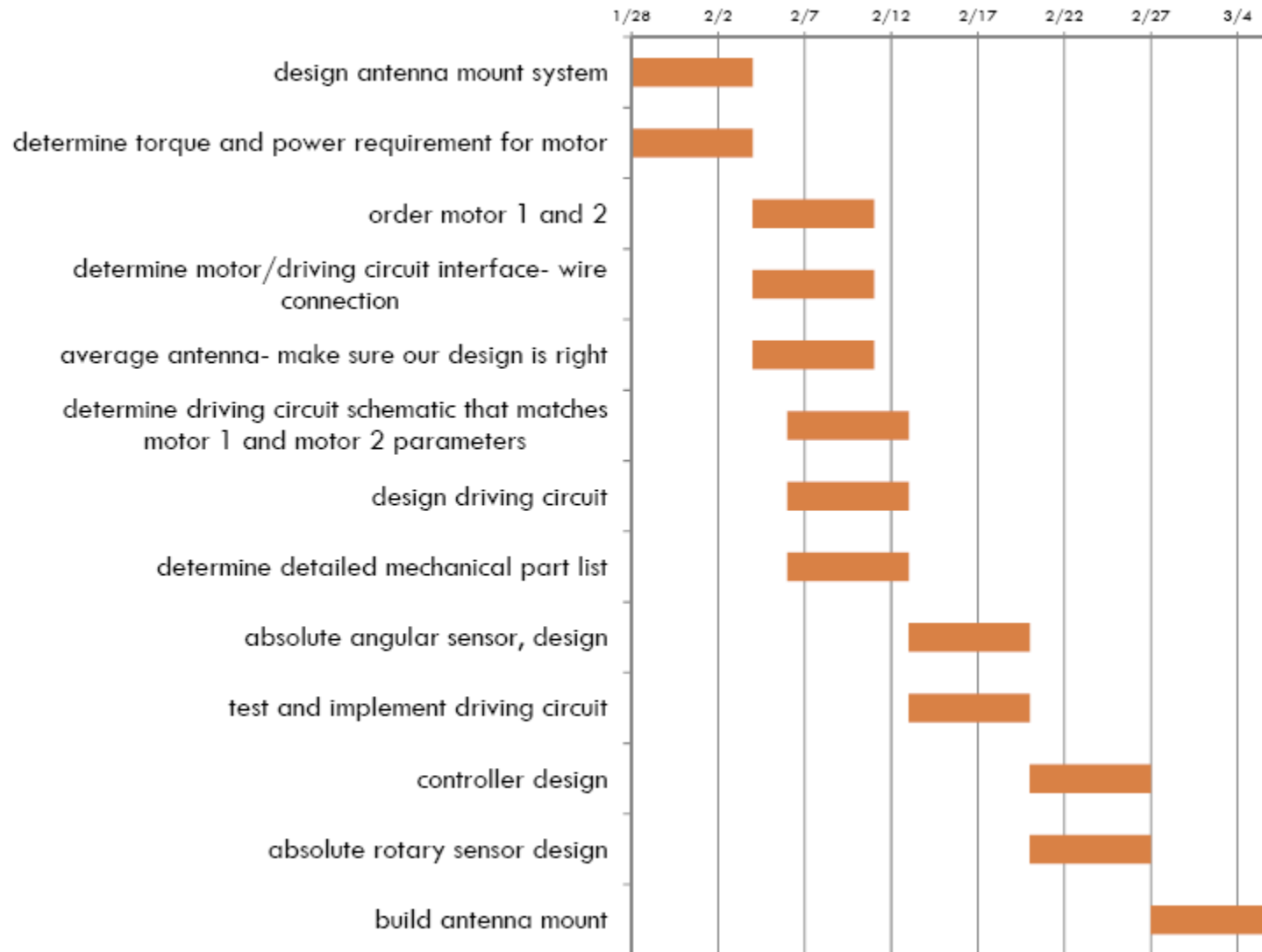
Implementation Planning - Example 1

Semester-End Deliverable

"Rear-Right Collision-Avoidance with an autopilot steering on a car frame of 4 wheels"



Sample -2



Example -3

Cap II		Implementation & Evaluation Plan (FINAL)	r2.15.12
WEEK	TASKS	MEMBER	
Feb. 6 - 11	Finalization of parts to be ordered	Brima	
	Order parts (send list to Dr. Harris)	Bathiya	
	Study how to interface microprocessor + sensors	Kurubel	
	Study software development guide for Etool (CC2540 programming IDE)	Bathiya	
	Finalization of camera sensor to use	Lauren + Kurubel	
	Calculate power requirements & identify battery required battery	Lauren	
	Sign up for Apple Developer Program and obtain Xcode IDE	Brima	
Feb. 12 - 18	Obtain an iPhone 4S	Brima	
	Follow up with Dr.Harris on status of order	Bathiya	
	Create schematic on P2PICE	Bathiya + Kurubel	
	Create PCB layout on Pad2Pad software	Bathiya + Lauren	
	Research antenna connection	Lauren	
	Investigate availability of IAR Embedded Workbench License	Lauren	
Feb. 19 - 26	Program mini-dev kit to get built-in temperature readings	Kurubel	
	Program dev. kit receiver to sync with the device	Lauren	
	Complete PCB layout and send schematic to Pad2Pad	Bathiya + Lauren	
	Study reference iPhone app code	Brima + Kurubel	
Feb. 28 - Mar. 3	Program mini-dev kit to read values from accelerometer - Set the sensor to provide continuous stream of data	Lauren + Bathiya	
	Deploy reference iPhone code and test the connectivity	Brima	
	Analyse accuracy and precision of these temperature readings	Brima	
Mar. 4 - 10	Prepare test environment - Find warm and cold setting - Prepare easy method of modifying ambient temperature quickly	Lauren	
	Program mini-dev kit to read values from built-in temperature sensor - Start with one reading of temperature, then program to provide continuous readings	Lauren + Bathiya	
	iPhone App Development - Identify main features needed to implemented in iPhone - Design and sketch user Interface (block diagrams) to outline the app - Address data storage format	Brima + Kurubel	

Example – 3 (continued)

Mar. 11 - 17	Program the microprocessor - First, deploy previous code to read built-in temperature sensor values - Then adapt accelerometer reading code for the external temperature sensor	Lauren + Bathiya
	iPhone App Development - Start programming a shell of the program with required user interface - Using reference code, incorporate required Bluetooth communication code	Kurubel + Brima
Mar. 18 - 24	Program the microprocessor - Continue to develop code to read values from external temperature sensor - Debugging - Test communications link between capsule and BLE receiver on PC	Lauren + Bathiya
	iPhone App Development - Continue programming/incorporating Bluetooth code	Kurubel + Brima
Mar. 26 - 31	Finalize microprocessor programming, debug	Lauren + Bathiya
	Finalize iPhone coding, debug	Kurubel + Brima
	Test connectivity between capsule and iPhone	Bathiya + Kurubel
Apr. 1 - 7	Use test environment to evaluate performance of data collection	Lauren
Apr. 8 - 14	Prepare for EGE Day	All

Example – 4

ID	Task Name	Duration	2nd Quarter				
			Month 1	Month 2	Month 3	Month 4	Month 5
1	Project Management	120d					
2	Perform Project Management	120d					
3	Detail Planning	38d					
4	Prepare Analysis Document	15d					
5	Confirm Inventory of Modules	5d					
6	Inventory Complete	0d					
7	Develop Code Work Groups	10d					
8	Develop System Test Groups	5d					
9	Develop Acceptance Test Groups	5d					
10	Work Groups Complete	1d					
11	Analysis Document Complete	0d					
12	Prepare System Work Plan	15d					
13	Develop Tasks	3d					
14	Determine Staffing Requirements	3d					
15	Prepare Work Plan	5d					
16	Preliminary Work Plan Complete	0d					
17	Review Work Plan	2d					
18	Revise and approve Work Plan	2d					
19	Publish Work Plan	0d					
20	Prepare Test Plan	16d					

Implementation Plan - Summary

- Summary
 - Detailed Road Map from Final Design to Reality
 - Detailed Plan to achieve quality project and to deliver on time.
 - Starting from this week
 - Much more detailed plan than the samples
 - **Implementation tasks – Detail (divide into small tasks)**
 - **Weekly Tasks + Deliverables**

Implementation Plan – Team Assignment

- Team Task
 - Much more detailed plan than the samples
 1. **Implementation tasks – Detail (divide into small tasks)**
 2. **Weekly Tasks + Deliverables**
 3. **Members in charge**
 - Submit Team Project Implementation Plan
 - Should include the above 3 items
 - Starting from the week of Jan 11 to the week of April 15
 - Use one form of the Examples
 - May use another form of team's choice
 - (Recommendation) Use of Computer Generated Form
 - Submission
 - A computer generated form (or pdf format thereof)
 - T Jan 19, 2019