

<i>Week</i>	<i>Date</i>	<i>Projected Goals</i>	<i>Comments</i>
1	9/25/16	Research: Street lamp standards Li-Fi standards Current traffic prediction techniques	Physical and electrical requirements of streetlamps. Do current Li-Fi standards exist? What regulations would we have to follow to broadcast Li-Fi? How are traffic patterns predicted and modified to improve flow. Basics of how Li-fi works.
2	10/2/16	Research: Photo receivers RGB LED's/LED drivers Optical filters (color prism)	Photo receiver types and specifications. LED technologies and specifications. Optical filter/splitter options Rx side sensor.
3	10/9/16	Research: Microcontrollers/Microcomputers Light modulation techniques	Is there a standard for Li-fi modem technology? What type of microcontroller/microcomputer would best for light modulation? What computer language? Details on how light modulation is commonly implemented.
4	10/16/16	Research: Photo receivers RGB LED's/LED drivers Optical filters (color prism)  Choose/Buy Components for basic prototype	Advanced Li-fi research. Select hardware for initial prototype construction  Choose specifics components to use for prototype
5	10/23/16	Test Components  Code: Code familiarization Template code	Small scale component construction. Verify component specs in the real world. Become familiar with coding on the microcontroller and microcomputer.
6	10/30/16	Revamp Proposal  Test Components  Code: Code familiarization Template code	Rewrite proposal with TA feedback.  Small scale component construction. Verify component specs in the real world.  Become familiar with coding on the microcontroller and microcomputer. Dissect source code.

7	11/6/16	<p>Revamp Proposal</p> <p>Prototype 1</p> <p>Code T0: Tx portion of source code using PWM</p> <p>Code R0: Rx portion of source code using PWM</p>	<p>Rewrite proposal with TA Feedback</p> <p>Build a Tx and Rx circuit. Run source code with separate Tx and Rx (vary Rx LED brightness depending on Tx LED)</p> <p>Separate source code so 2 launch pads can be used. One as Rx, and the other as Tx.</p>
8	11/13/16	<p>Prototype 1</p> <p>Code T0: Tx portion of source code using PWM</p> <p>Code R0: Rx portion of source code using PWM</p>	<p>Build a Tx and Rx circuit. Run source code with separate Tx and Rx (vary Rx LED brightness depending on Tx LED)</p> <p>Separate source code so 2 launch pads can be used. One as Rx, and the other as Tx.</p>
9	11/20/16	<p><i>(Thanksgiving Break)</i></p> <p>Reevaluate Prototype 1</p> <p>Code T1: Modify T0 to send bits</p> <p>Code R1: Modify R1 to receive bits</p>	<p>Reevaluate parts being used for the circuit. Look at other options depending on findings.</p> <p>Make T1 send bit values with the RGB on a fixed time</p> <p>Make Rx launch pad blink LED to show bit value received.</p>
10	11/27/16	<p>Build Prototype 2</p> <p>Code T2: T1 with UART</p> <p>Code R2: T2 with UART</p> <p>Project Progress Report due 8 Dec 16</p>	<p>Implement UART to choose the bit being sent (hit the 0 or 1 key on Tx) and showing the received bit on the Rx side.</p> <p>Report on progress done so far due to faculty mentor (Dr. Namuduri).</p>
11	12/4/16	Build Prototype 2	Implement UART to choose the bit being sent (hit the 0 or 1 key on Tx) and showing

		Code T2: T1 with UART  Code R2: T2 with UART	the received bit on the Rx side.
12	12/11/16	Finals Week	
13	12/18/16	Winter Break	(buffer to reevaluate and catch up)
14	12/25/16	Winter Break	(buffer to reevaluate and catch up)
15	1/1/17	Winter Break	(buffer to reevaluate and catch up)
16	1/8/17	Winter Break	(buffer to reevaluate and catch up)
17	1//15/17	Refamiliarize with past research and code	Potentially retest system and verify points as to how to improve the system.
18	1/22/17	Chris: Tx MCU talking with Rasp Pi via UART  Nathan: Rx receive all data on MCU and send to Rasp Pi via UART  Forrest: Rx Rasp Pi code. Receiving user input in GUI	Continue individual projects
19	1/29/17	Chris: Test direct Rasp Pi UART to hardware  Nathan: MCU of Rx done to include UART to Rasp Pi  Forrest: RX Rasp Pi code. Determine action via file input	Continue individual projects

20	2/5/17	Chris: Tx hardware reeval and work on Pi comms  Nathan: Rx hardware reeval and Rasp Pi code  Forrest: Finalization of RX Rasp Pi code and testing	Chris: revise TX led driver to reduce low current duty cycle reduction and instability. Add rasp pi current control to driver. Work on getting mcu to read data from pi.  Nathan: Increase frequency response on hardware and finalize Rasp Pi code to output data in correct format  Forrest: Once completed, finding a way to loop program for constant data access and save file
21	2/12/17	“ “	
22	2/19/17	Finalize code and testing. Decide on final product parts.	
23	2/26/17	Order parts for final product	Build prototype 3
24	3/5/17	Other capabilities	Sending audio over a channel, CSK modulation, daylight operations, 2 way communication, etc.
25	3/12/17	<i>(Spring Break)</i>	
26	3/19/17	Build final on protoboard	
27	3/26/17	Test and confirm results	
28	4/2/17	Completed/constructed system	Verify entire system is working at full capacity.
29	4/9/17	Test/Reevaluate/Deliverables	Final testing and evaluating to confirm it works under all conditions
30	4/16/17	“ “	
31	4/23/17	“ “	
32	4/30/17	Project Presentation: Final Semester	After presentation, discuss project preservation. Write formal thank you notes to all staff involved. Pending graduation!

