

Instrument for the Identification of Live and Dead Bacteria

Arjun Krishnamoorthi

SCHEDULE

REVISION – 1
4 December 2019

Execution Plan for Instrument for the Identification of Live and Dead Bacteria

Schedule:

Status Legend:

- **Completed**
- **In progress**
- **Not started, on schedule**
- **Behind schedule**

TASK	END DATE	STATUS	DATE COMPLETED
Submit URS proposal to department	8/1/2019		7/22/2019
Obtain departmental approval for project	9/16/2019		7/26/2019
Apply for URS Program	9/16/2019		8/25/2019
Learn and understand the problem	9/16/2019		9/16/2019
Literature review and planning	9/16/2019		9/16/2019
Concept of Operations	9/16/2019		9/16/2019
Begin designing the spectroscopic instrument	9/24/2019		9/22/2019
Identify possible component vendors based on design, check laboratory for any spare parts	9/27/2019		9/27/2019
Finalize requirements and interfaces of instrument	9/29/2019		9/29/2019
Functional System Requirements	9/30/2019		9/30/2019
Interface Control Document	9/30/2019		9/30/2019
Execution Plan	9/30/2019		9/30/2019
Validation Plan	9/30/2019		9/30/2019
Order any remaining component parts which are not	10/2/2019		10/2/2019

Schedule
Instrument for the Identification of Live and Dead Bacteria

Revision 1

available in the laboratory			
Begin constructing disinfection unit	10/3/2019		10/2/2019
Begin constructing emission monochromator	10/4/2019		10/2/2019
Begin constructing excitation monochromator	10/5/2019		10/5/2019
Begin writing and testing GUI software for excitation and emission monochromators through serial communication link	10/6/2019		10/6/2019
Continue optimizing existing subsystems as needed	10/8/2019		10/8/2019
Midterm Presentation	10/9/2019		10/9/2019
Test and validate disinfection unit for the inactivation of bacteria	10/10/2019		10/8/2019
Start scanning excitation monochromator with controller and driver	10/11/2019		10/10/2019
Test and validate emission monochromator for normal fluorescence measurements with disinfection unit, along with performing PCA	10/12/2019		10/10/2019
Visit Physics Machine Shop to finalize emission monochromator enclosure	10/13/2019		10/11/2019
Continue optimizing existing subsystems as needed	10/15/2019		10/15/2019
Receive any ordered component parts and order more as needed	10/16/2019		10/16/2019
Test and validate excitation monochromator for synchronous	10/18/2019		10/18/2019

Schedule
Instrument for the Identification of Live and Dead Bacteria

Revision 1

fluorescence measurements			
Obtain emission monochromator enclosure	10/21/2019		10/20/2019
Visit Physics Machine Shop to finalize excitation monochromator enclosure	10/23/2019		10/23/2019
Continue optimizing existing subsystems as needed	10/25/2019		10/25/2019
Test and validate control and display unit, including ability to perform PCA	10/27/2019		10/25/2019
Continue optimizing existing subsystems as needed	11/6/2019		11/6/2019
Progress Update 1	11/6/2019		11/6/2019
Obtain excitation monochromator enclosure	11/9/2019		11/6/2019
Continue and finalize validation of subsystems	11/12/2019		11/12/2019
Prepare for subsystem demonstrations	11/18/2019		11/18/2019
Project Subsystem Demonstrations	11/18/2019		11/18/2019
Progress Update 2 (Final Presentations)	11/20/2019		11/20/2019
Work on Final Report	12/04/2019		12/04/2019
Final Report Due	12/04/2019		12/04/2019