



ECE 189
2013-2014


AutoPonix

Ryan Born
Ludim Castillo
Alex King
Manuel Perez
Greg Swanson




AutoPonix is an automated water quality monitor and adjustment system for the maintenance of an aquaponics system. The pH, temperature and conductivity of the water are all monitored, controlled and logged. The data are transmitted via WiFi to a server that hosts a site displaying charts of system data.


pH Sensor
Keeps pH at a healthy level for plants and fish.




Conductivity Sensor
Keeps conductivity at a healthy level for plants and fish.




Temperature Sensor
Samples the temperature in the water.



Camera
Used to provide snapshots of the state of the system.




Processor
An NXP LPC1788 processor controls all subsystems.



Website
Shows captured data at various time resolutions.



Water Pump
Floods plant tray with water on fifteen minute intervals.



Lighting
Provides light for the plants to grow.



Motors
Dispenses solids to balance pH and conductivity, and to feed fish.



Wi-Fi Module
Sends data to the server for remote viewing of system status.

