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**INTEROFFICE MEMORANDUM**

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**TO:** DEPARTMENT OF ENGINEERING TECHNOLOGY FACULTY  
**FROM:** DAN KOHN  
**SUBJECT:** EXAMPLE SENIOR PROJECT PROPOSAL MEMO  
POOL MONITOR SYSTEM  
**DATE:** JAN 25, 2012

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The project I am proposing to build for senior projects is a pool monitoring system. This system will continuously monitor an in-ground pool for level and water temperature as well as air temperature by the pool. The system will also record pool usage by detecting surface disturbances of the water (either by the level sensor already mentioned or by an additional sensor if the level sensor has insufficient sensitivity). This system will transmit all the necessary data via a wireless data link to a Rabbit Board. The Rabbit Board is a microcontroller that has Ethernet (TCP/IP) capabilities. The Rabbit board will receive the transmitted data and serve a web page to a home network for monitoring purposes. The full system can be seen in Figure 1.

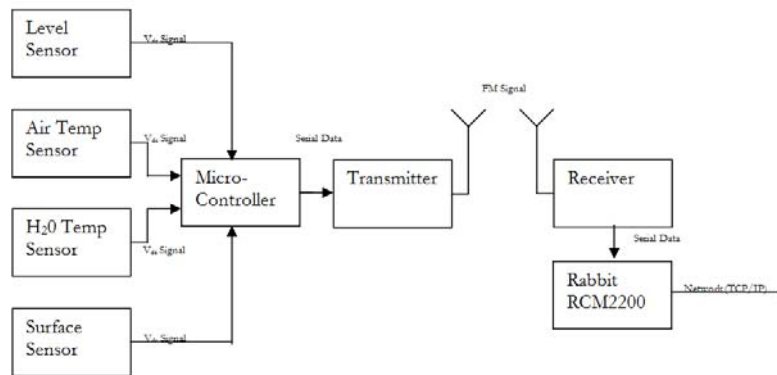


Figure 1 – System Block Diagram

The project was conceived after a problem with my in-ground pool, caused by a faulty o-ring in the pool's filtering system, caused the pool level to drop destroying the pool pump because it ran dry. With the features of the project, pool water level can be monitored from a remote location. Also, for security reasons, pool usage can also be monitored via this system. Water temperature and air temperature were added for convenience.

In the future I would like to add an automatic shut off for the pool pump and the ability to shut off the pump remotely via the internet. This would require two FM transceivers as well as some control relays and will be added to the project if time and budget permits.

This project will make use of Microprocessor Interfacing (TECH 4234), Machine Language Programming (TECH 3233 and 4234), C Programming (TECH 1211), Networking (TECH 4281 and 4242) and Industrial Electronics (TECH 3281).

The cost of the project is expected to be around \$500 (more if transceivers are purchased instead of a transmitter/receiver pair).