Internet of Things and Rapid Prototyping

Capstone Project Rubric

Performance to Expectations (200 points required to graduate)

* Meets – meeting the “Meets” expectations criteria will result in 80% of the total available points for a category.
* Exceeds – Performance above meets will result in 90% to 100% of the available points.
* Any “Meets” items not achieved will result in a deduction of points at the discretion of the instructor/assistant.

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| Category | Points | Exceeds | Meets |
| Product Proposal / Plan | 25 | Clear non-technical description of the idea, along with use case(s) and feature list. Minimal and stretch goals for project outlined. Project plan includes daily objectives. | Project proposal is clear, but could use more details about use cases, requirements, and/or features. Project plan with key milestones. |
| Product Design | 15 | Thorough conceptual drawings, hand drawn schematics, flowchart of overall functionality. | Conceptual drawing. Flowcharts of some functionality. |
| Implementation | 20 | Fritzing diagram and clean well laid out schematics. Product enclosure files (.stl or .ai). Use of daily plan to track milestones. | Fritzing diagram and/or schematics messy or with errors. Design files provided, but light on details. |
| In The Wild | 10 | KiCad PCB design for main components with 3D image in presentation or NodeRed integral to functionality. | Use of Node-Red, Sleep, or Power Management |
| Physical Build | 30 | Product / prototype completed as designed and operable. Parts properly secured. Product had a finished appearance. | Product / prototype mostly completed as designed and mostly operable. Some parts may be loose. Product had a unfinished appearance. |
| Code Quality | 30 | Code strictly follows style guide. Code is well formatted. Proper use of functions and global/local variables. Code is logical and easy to follow. Is appropriately commented. | Code follows style guide, is reasonably commented, and compiles. |
| Functionality | 20 | Product operability exceeds minimal requirements from project proposal. | Product meets minimal requirements from project proposal. Product is mostly working. |
| Cloud Integration | 20 | Data published to public dashboard. Product is controllable through dashboard or integrated with Zapier / IFTTT. | Data published to public dashboard. |
| Hackster.io | 20 | Hackster.io story detailed with description of motivation, capabilities, images, screenshots, etc. Fritzing, schematics and 2D/3D product files are viewable in Hackster.io (.stl, .jpg.) without need to download. | Minimal Hackster.io sections completed. Story section describes product / functionality. |
| Github | 10 | Github is updated as each new functional is added. Commit comments are easy to follow. Detailed README.md outlines project. | Github is committed daily. Proper created and used .gitignore. |
| Presentation | 20 | Presentation is clear/readable, includes: team member introduction, idea/motivation in non-technical terms, problem(s) the product addresses, use cases, challenges during development and how they were overcome, inclusion of design files, code samples, flow charts, and/or dashboard screen shots, outline of future steps, and contact information including hackster.io and github. | Presentation covers team introduction, project summary, challenges, contact info. |
| Video Demonstration | 20 | Video demonstration(s) is high quality and clearly shows all aspects of product functionality, as well as user interaction. | Video demonstrates product functionality and shows basic video editing skills. |
| Q&A | 10 | Student(s) able to answer questions with clear and concise responses. If answer is not known, student provides appropriate response indicating such. | Student(s) able to answer most questions. |