CSSE4011 Project
Milestone and Final Demo

1 Assessment

- Milestone Due: your session in week 11 , Final Demo Due: your session, week 13
- Course Marks: Milestone 10%, Final Demo 40%
- Electronic Course Profile Pass Hurdle: Optional to be submitted.

2 Project Topic

Projects are undertaken as a team of 3 members. You are required to formulate a project using the topics provided (See Black Board for the Project lists). Topic requirements are:

- At least one sensor other than temperature or light, e.g. PIR (Passive Infrared), Distance, accelerometer, etc
- At least one actuator, e.g. Servo, speakers, VGA monitor
- Use non-trivial wireless networking or IoT-based protocols (e.g. MQTT) with multiple nodes (including base)
- Use techniques/methods and non-trivial algorithms from lectures 1-9, e.g. Data Fusion, Machine Learning, IoT BlockChain, etc
- Use of a web dashboard and/or a non-trivial visualisation of sensor data as a PC/Mobile App.

Alternate platforms (not provided by the course) may be used but require prior approval. The use of the Zephyr RTOS development environment is a requirement.

Project topics must not include projects from other courses or have been previously submitted for assessment. Platforms used must also not have been used in other courses.

The course can provide some equipment, and equipment can be provided by a team member (after seeking approval from the course coordinator). Note: creating PCBs will not be undertaken.

Topics must be approved by the course coordinator (prior to the milestone).

Use of Generative AI
The use of Generative AI is permitted for idea generation. You can use Generative AI text to develop a project description.

Groups
Groups are restricted to 3 members. Groups cannot do the same topic but are permitted to share equipment.

3 Project Wiki

As a team, you must maintain a wiki site of your choosing - e.g. Github, bitbucket. You must document your project and evidence of progress and final outcomes onto your project wiki. You must use the project's short title as the name for an external repository or wiki.

4 Project Title (Long and Short) and Naming Conventions

Construct a suitable project title. The project title should have a long and short title. The long title should accurately reflect the project. A short title should be based on a rainbow code that must consist of:

"related name or term from Greek Mythology" - "Colour"
e.g. Zeus-yellow

5 Team Member List and Roles

The roles of each Team Member MUST be clearly stated and include a paragraph justifying the team member's involvement (written by the respective member). The paragraph can be up to one paragraph per member.

6 Project Overview/Scenario

The following must be included:

- Project and Scenario Description (e.g. what is the project)
- at least 5 Deliverables and Key Performance Indicators - how is the 'success' of the project measured?
- System Overview (Hardware Architecture - block diagram of the system, Top-level flow chart of software implementation (mote and PC).

- Sensor Integration - What sensors are used? What type of data is required? How are the sensors integrated?
- Wireless Network Communication or IoT protocols/Web dashboards - e.g. What is the network topology or IoT protocols used? What protocols are used and how?, What sort of data rate is required? You must also include a message protocol diagram.
- Algorithms schemes used - e.g. Machine learning approaches
- DIKW Pyramid abstraction. Provide a scenario in which your system can operate. Consider what DIKW Pyramid layers that your system can contribute to. Link
- Project Software/Hardware management. Develop a task allocation and timeline and use a novel way of visualising (e.g. Gantt or spiral chart)

7 Equipment

List the equipment required.

8 Progress (Not Assessed for the Milestone)

List the current progress made in the project (must be kept up to date, as the project progresses.

9 Milestone Submission

Add a link to your project repo/wiki to the post on milestone edstem post. Your repo/wiki should be public.

Milestone Presentation
Your team must present your project milestone in your assigned lab session in week 11 .

10 Final Project Demo (Assessed in week 13)

You must be able to demo your project during a session with all team members. Time slots will be listed on edstem. You will also need to produce a poster and upload it to BlackBoard. The repo/wiki will also be assessed as part of the final demo.

11 Milestone Criterion

Project Description	
0	None or the project description is not sufficient.
1	Has a project description but has shortfalls or errors.
2	Has a well-thought-out project description.
Project Block Diagram	
0	None or the block diagram is not sufficient.
1	Has a block diagram but has shortfalls or errors.
2	Has a well-thought-out block diagram.
DIKW Pyramid Abstraction	
0	No or limited DIKW Pyramid abstraction.
1	Has a DIKW Pyramid abstraction but has shortfalls or errors.
2	Has a well-thought-out DIKW Pyramid abstraction.
System Integration	
0	No system integration.
1	Has some sensor integration details but not for the whole system.
2	Has full sensor integration details for the entire system.
Wireless Network Communications	
0	No consideration for wireless network communications.
1	Has an overview of the wireless network communication but not a message protocol diagram.
2	Has a wireless communication architecture with a message protocol diagram.
Deliverables and Key Performance Indicator	
0	Has no KPI.
1	Has less than 4 KPIs or KPIs do not have enough details.
2	Has 5 KPIs which are sufficiently described in detail.