# Software Engineering Craftsmanship Program NextGen US Phase I – Capstone Project

**Capstone**
The class will be divided into teams to create a coding project that encompasses the concepts and techniques taught in this program.

Each team will be responsible for designing and coding their assigned project.

Each Friday the teams will select 2 members to make a 30 minute presentation to the class and invited visitors showing the progress of their project. The presentation will be followed by a 15 minute question and answer period. The team members presenting will rotate during the program.

The weekly presentations are focus as follows:
1.  Vision Document and Use Case Model
    <u>Vision Document</u>: Provides an overview of the project's objectives, scope, and stakeholders' needs.
    <u>Use Case Model</u>: Describes the system's functionality from the user's perspective, detailing use cases and actors.

2.  Design Model
    <u>Design Model</u>: Represents the system's architecture and design, including application flow, security implementation, etc.

3.  Implementation Model
    <u>Implementation Model</u>: Provides detailed specifications for implementing system functionality, often including code.
4.  Test Plan and Code Demonstration
    <u>Test Plan</u>: Outlines the approach and strategy for testing the system, including test cases and test scenarios
    <u>Code Demonstration</u> a live demonstration of the project.

Each presentation will be evaluated by the other students using the following criteria:
* Technical Design and Implementation
* Security Design and Implementation
* Functional Design and Implementation
* Presentation Skills

In addition each team member will evaluate the other members of their team weekly, using the same criteria.

The goal of these capstone projects is to learn to design and code in a group, to learn professional techniques to solve real world problems.

Success criteria for professional project include (in priority order):
1. Does the code solve the business requirements?
2. Is the code maintainable?
3. Is the code efficient?

In addition professional projects feature:
- Modular Design
- Logging
- Testing
- Documentation
- Scalable adaptability
- Security
- Flexibility
- Code Review

**Company Background:**

Buzzword Software Solutions Limited is a multi-national corporation based in Dallas TX, with offices in Tokyo Japan, Johannesburg South Africa, São Paulo Brazil, and Berlin Germany. The company has approximately 1000 employees, across all their offices.

Their best known system is a AI Buzzword generator used to create corporate reports and user documentation.

The official user documentation for this product includes:
"*Leverage cutting-edge technology to seamlessly integrate advanced functionalities into our existing systems, ensuring that user experience is optimized through intuitive interfaces and robust performance metrics, ultimately driving operational efficiency and enhancing stakeholder engagement.*"

An example for the documentation generated by this flagship produce:

*"Empowering a transformative technological ecosystem that seamlessly integrates innovation and collaboration, we commit to harnessing cutting-edge solutions to drive sustainable growth, enhance operational efficiency, and create unparalleled value for our stakeholders, ensuring we remain at the forefront of the digital frontier."*

The company has recently acquired several small companies and restructured into a number of internal divisions.   This has resulted in need for a number of new company wide tools.

The new software being planned includes...

The Marketing department is requesting a data stream of computer quotes, jokes, and computer related biographies to support a new branding effort.  This project has been assigned to <u>Team White</u>

The Internal Audit department  is requesting a inventory tracking system to manage the physical resources including laptops, servers, etc. The project has been assigned to <u>Team Blue</u>.

The Legal Compliance department is requesting a software license tracking system to manage the installation and use of external software.  This project has been assigned to <u>Team Red</u>.

The Executive department is requesting a system to manage the scheduling of the meeting rooms and video presentation systems. This project is assigned to <u>Team Green</u>.

The Sales department is requesting a system to track sales leads across the various locations. The project is assigned to <u>Team Purple</u>.

The Software Development department is requesting a system to organize open-source resources such as books, web sites etc. The project is assigned to <u>Team Yellow</u>.

The initial deployment of these projects is focused on internal customers, with future deployments offered to external customers as featured software solutions.