

# COEN 241 Project Proposal Instructions

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## Learning Objectives

The aims of the project include the following learning objectives:

- Get a hands-on experience on the technologies that we have learned in class such as:
  - Virtualization, containers and/or serverless
  - Software Defined Networking
  - Hadoop and more...
- Achieve technical knowledge required in taking an idea to cloud

## Project Overview

The purpose of this project is for COEN 241 students to come up with an idea that utilizes the cloud in any way. The project is open-ended in nature, thus we do not put much restrictions on what topics the students must pursue. There are two high-level topics that the students can choose to base their projects on.

1. **Building a cloud based application**

If you choose to pursue this topic, you can either build a completely new application or port an existing application, but the requirement is that it must be on the “Cloud”.

2. **Replicate a research outcome**

If you choose to pursue this topic, you can find interesting research related to cloud computing and try to replicate the paper’s outcome.

For both of the topics, you must be able to demonstrate your outcome in the cloud. In the context of this class the cloud means one of the following:

1. A public cloud (e.g., AWS, GCP, Azure)
2. A private cloud shared with other people in your organization or a lab
3. A set of machines that you own connected via a private network

In choosing any of the three options, **you must provision and use at least 3 cloud resources (3 VMs, containers, serverless jobs, etc...)**. Failure to use 3 resources would result in deduction in your grade. If you are not sure if some cloud product that you are planning to use counts as cloud resources, ask the instructor.

## Project Todos & Grade Breakdown

- Team member selection (5%)
- Every member of the team submits a project proposal (15%)

- Each team does a final presentation (30%)
- Every member of the team submits final paper (50%)

## Project Proposal Requirements

Your proposal must be submitted as a PDF file and should have the following information

- The title of your project (you can change this later).
- List the names and @scu.edu email addresses of all of your team members.
- (Optional) Indicate if you are sharing this project between COEN241 and another class.
- Project description (1-2 pages): In this section, you will describe what you plan to do for your project. It's fine if your project eventually evolves into something different, but your proposal should lay out a sensible initial plan. This section should answer the following questions (it's a good idea to structure your project description in this way, but you can structure differently if you like):
  1. Describe the main goal(s) of your project. E.g., if you are building a new application, what is the main purpose of the application.? If you are replicating a research project, what is the goal of the research project?
  2. Briefly motivate why you chose this goal – why do you think it is important, interesting, challenging and/or likely to succeed? If you have any secondary or stretch goals (i.e., things you will do if you have time), please also describe them.
  3. What cloud technologies will you use? Again, this can change as you learn more about the different technologies, but try to make the best attempt.
  4. How will the architecture of your system look? E.g., How many servers/containers/vms will there be? How are they connected? How will they talk to each other?
  5. How will you divide the task across each team member? Who is responsible for what?

## Submission Instruction

Submit your project proposal, final presentation and final report on Camino. **Each team member should submit a copy of the milestone separately.**