**Lab Assignment #3 – Designing and implementing a complete web app using MEAN stack**

Due Date: Week 8.

Purpose: The purpose of this homework is to:

* Build an Express Rest API
* Build an Angular 2 MVC front end that utilizes Express rest API
* Perform CRUD operations

References: Read the textbook, lecture slides, and class examples. This material provides the necessary information that you need to complete the exercises.

Requirements:

* - This assignment must be completed using the **pair programming technique - two students will work togather** . Find a classmate who you can work with. (<https://en.wikipedia.org/wiki/Pair_programming>).
* Show your app working in class
* Submission
* Create a ZIP file with your project files **without** node\_module folder
* Give the zip file name YourFullName\_comp308\_Lab3.zip
* Upload to dropbox before the end of week-8 class

**Statement of work**

Create an Express Rest API which exposes CRUD functionalities for a student/course system. Create a *student* model which describes student information (*student number*, *password*, *first name*, *last name*, *address*, *city*, *phone number*, *email*, *program*) and also a *course* model which describes course information (*course code*, *course name*, *section*, *semester*). The information should be stored in a MongoDB database. Provide authentication capabilities using Passport – local strategy.

Create an Angular 2 MVC front end that allows students to *login*, *add* a course, *drop* a course, and *list* all the courses.

Apply MVC principles. Design nice and friendly web pages.

You may use class example as your seed/base project.

**Evaluation Criteria**

**Approach-1**. If you modified example code and made it work with above requirements the marks breakdown will be as follows

[a] Basic working - max 70%

[b] Item [a] + UI updates- e.g buttons, layout, colors - max 80%

[c] Item [b] + error handling, any bug finding and fixing, code optimization - eg. do not allow same course more than once, noticable improvements - max 90%

[d] Item [c] + some wow factor - max 100%

**Approach-2**. If you did not use the example code at all, the marks breakdown will be as follows

MongoDB database 10%

Express Rest API 40%

Angular 2 MVC 35%

Friendliness: 10%

Innovation: 5%

**Total**: 100%