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Course Code: ELEC3225 – Applied Programming Concepts

Assignment #2

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**Assignment #2 – Waterfall Model**

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Description automatically generated**

Figure 1: Diagram for waterfall model

**Requirements Definition:**

* Database of users: should work for 100 students, 10 instructors, and 1 administrator.
* Database of courses: will contain course information such as the CRN, course name, times, instructor, prerequisite courses, corequisite courses.
* 3 types of users: student, instructor, administrator
* Student: see schedule, add/drop courses, search courses
* Instructor: see schedule, see class list, search courses
* Administrator: add/remove courses, add/remove users, add/remove student from a course, search class lists, search courses

Make sure the above requirements cover all necessary functionality of the program.

**System and Software Design**

Decide how the 3 types of users are connected, and how administrators will have access to instructors, instructors to students, and administrators to students.

* Columns on database of users: type of user, first name, last name, phone number, WIT number, email address
* Special columns for students: major, graduation year

**Implementation and Unit Testing**

Write code for all classes and create a database for testing. Make sure all parts work for different test cases and common mistakes that users might make (e.g. student trying to register for wrong course).

**System Testing and Integration**

Write code to link all classes together and use polymorphism and inheritance. Test the program for many cases and make sure all classes interact correctly with each other.

**Operation and Maintenance**

Let some users test the program (Professor Rawlins and maybe some students from the class) and implement any changes they think are necessary.