# Course Registration System UML Diagrams

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# User (parent class)- class Student and Admin inherit from User

#### +username

- +password
- +fName
- +IName

All of these are protected meaning they are encapsulated within the family and only the parent (User) and the children (Admin and Student) can access the fields

- +default constructor
- +public User(String fName, String IName, String username, String password)
- +toString method
- +public void viewAll(ArrayList<Course> courses)

### Admin (child class) -has interface that implements methods below

# +Super()

- +public Course createCourse(ArrayList<Course> courses);
- +public int searchCourse(ArrayList<Course> courses, String name, int secNum);
- +public int deleteCourse(ArrayList<Course> courses);
- +public void editCourse(ArrayList<Course> courses,ArrayList<Student> students);
- +public int chooseOptionToEdit();
- +public void displayCourseInfo(ArrayList<Course> courses, String name, int secNum);
- +public Student addStudent(ArrayList<Student> students);
- +public ArrayList<Course> getFullCourses(ArrayList<Course> courses);
- +public void viewAllFull(ArrayList<Course> courses);
- +public void writeFullCourses(ArrayList<Course> courses);
- +public void sortCourses(ArrayList<Course> courses);
- +public void printNamesinCourse(Course c);
- +public void viewCoursesforStudent(Student s, ArrayList<Course> courses);
- +public Student studentSearch(ArrayList<Student> students);
- +public Course returnCourse(String name, String id, ArrayList<Course> courses);
- +public Course courseSearch(ArrayList<Course> courses);

#### Course

- +name
- +id
- +maxStuds
- +currentNumStuds
- +studentList
- +instructor
- +location +secNum
- +default constructor
- +Course(String name, String id, int maxStuds, int currentNumStuds, ArrayList<Student> studentList, String instructor, int secNum, String location)
- +getters/setters
- +boolean isFull(Course c)
- +int compareTo(Course o)
- +boolean equals(Object o)
- +printCourse(Course c)
- +printCourseStudent(Course c)
- +void printCourseAll()
- +void removeStudent(Course c, Student s)
- +int studentInCourse(Student s, Course c)
- +String toString() --> Overriding: toString method in the Course class and the Student class (override from default)

# Student (child class)-has interface that implements methods below

- +Super()
- +fullname
- +int StudentCourseManagement();
- +String getFullName();
- +void setFullName(String fullName);
- +String toString();
- +void viewAll(ArrayList<Course> courses); //override Admin viewAll method because the print course information is different (student shouldnt be able to see other students in class so because of Polymorphism the compiler knows to call this method because it is student.viewAll()
- +void viewAllCoursesNotFull(ArravList<Course> courses):
- +viewAllMyCourses(ArrayList<Course> courses, Student s)
- +public Course courseSearch(ArrayList<Course> course);
- +public int inCourse(Course c);
- +boolean registerCourse(Student s,Course c);
- +void withdraw(Course c, String fName, String lName, ArrayList<Student> students);

#### Course Management (main)

- +ArravList<Course> courses
- +ArrayList<Student> students
- +Admin admin=new Admin()
- +Student student=new Student()
- ---> this creates null admin/student objects to call the methods on
- +AdminChoiceMenu()
- +AdminCourseMenu()
- +AdminReportsMenu()
- +StudentCourseMenu()
- +Student studentLogInProcess(String username, String password, ArrayList<Student> students)

Serialization occurs when exiting the program. Program checks if it has ever been serialized before opening. If not, then reads from a CSV file.