# CS139 Algorithm Development
# Fall 2004 – Sections 4 & 5

**Instructor** Mohamed Aboutabl ( aboutams@jmu.edu )

Office: ISAT/CS 207
Phone: 568-7589

**Class Policies**

Please see the policies page for class policies

**Class Meetings**

| | **Monday** | **Tuesday** | **Wednesday** | **Thursday** |
|---|---|---|---|---|
| Section 4 | Lecture 2:30 – 3:20pm Room: ISAT 236 | Lab 2:00-3:15pm Room: ISAT 248 | Lecture 2:30 – 3:20pm Room: ISAT 236 | Lab 2:00-3:15pm Room: ISAT 248 |
| Section 5 | | Lab 3:30-4:45pm Room: ISAT 248 | | Lab 3:30-4:45pm Room: ISAT 248 |

**Office Hours:**

Mon & Wed 2:00pm – 2:30pm. You may also make an appointment via e-mail.

**TA Consulting Schedule – Room 250:**

| Who | **Sunday** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
|---|---|---|---|---|---|---|
| 1- Sara Prochnow | 7pm – 9pm | 7:30pm – 9:30pm | | | | 3pm – 5pm |
| 2- Ryan Slominski | 9pm – 11pm | 5:30pm – 7:30pm | | 5:30pm – 7:30pm | | |
| 3- Jerry Timbrook | 3pm – 5pm | | 5:30pm – 7:30pm | | 7:30pm – 9:30pm | |
| 4- Alan Crouch | 1pm – 3pm | | 7:30pm – 9:30pm | | 5:30pm – 7:30pm | |
| 5- Matt Kesler | 5pm – 7pm | | | 7:30pm – 9:30pm | | 1pm – 3pm |

**Course Overview**

General Overview: This course provides the student with an introduction to and practice in the science of formal problem solving with a focus on developing algorithms that can be executed on a digital computer. Some themes of this course will include:

- developing clear, concise, and correct algorithms to solve problems on a digital computer
- software engineering approach to programming
- professional ethics in computer programming
- coding practice, practice, practice
- producing correct output that conforms precisely to written specification
- conforming to local documentation standards and programming practices

The lecture days will include a theoretical discussion of programming concepts and features. The lab days will permit students to practice what they have learned in lecture or read in the books. Labs will include both hands on exercises as well as paper/pencil work. If a student finishes the assigned lab exercise early, time to work on programming assignments is provided. In general, labs will have an assigned task, so should not be viewed as “study hall”.

We will use Blackboard as a means of communicating. Included will be the online grade book, upcoming lectures, surveys, practice quizzes and assignments. All students should be enrolled in Blackboard and are

attached to this class (if you are properly registered). Announcements for class will be made on the Blackboard announcements page.

## Textbooks and Required Materials

**LEWIS**, JOHN & LOFTUS, WILLIAM (2004). *Java Software Solutions Fourth Edition.* Addison-Wesley. ISBN 0-321-24583-0. *Provides concrete examples of programming concepts and implementation techniques using the Java language as a base.*

**MATA-TOLEDO,** RAMON & Cushman, Pauline (2000). *Schaum's Outline - Introduction to Computer Science*. McGraw Hill. ISBN 0-07-134554-X. *Provides general foundation material for the study of Computer Science and will be used as a workbook and to supplement the Java book.*

***JAC Card**: There may be times in lab that you need to print a worksheet, a completed assignment or other work. You must have your JAC card with you and some money on it for printing. Make sure that you have a couple of dollars on the card each day.*

***Backup Media**: Whether you use a floppy disk or a memory stick, it will be important that you have a backup device available to use in the lab. While you will get some network space, sometimes the network goes down and you need some way to continue working. Lab machines do not provide a permanent save. When the machine is logged out, your work is lost.*

***Pocket folder**: Each student must bring to class one pocket folder with his/her name marked clearly (printed) on the tab, last name followed by first name. I will return all work to your folder which will be available in the lab.*

### Grading Basis

| | |
|---|---|
| Exam 1 | 15% |
| Exam 2 | 15% |
| Final Exam | 25% |
| Programming Tests (expect 6 or 7) | 30% total |
| Labs, class participation, homework, surveys | 15% total |

**Grade Thresholds:** A ≥ 90% , B ≥ 80% , C ≥ 70% , D ≥ 60% , f < 60%

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| Unit Summary | Programming Test<br>Not all units will have a separate programming assignment |
|---|---|
| 1. Introduction and general skills | Compile/Submit/Read/Display |
| 2. Basic operations with decisions | Basic operations with decisions |
| 3. Programming abstraction | Programming with functions |
| 4. Iteration structures | Programming with loops |
| 5. Using classes as tools | Using classes |
| 6. Developing classes | Developing classes |
| 7. Introduction to data structures with arrays | Using arrays |

A unit will consist of a group of lectures, lab exercises, and will generally culminate with a programming test.