



**Course Description/Rationale/Overview**

This course uses computer technology in problem solving and programming. Advanced programming theory using Object Oriented programming language - Java, UML/Class diagram techniques and JavaDoc documentation approaches are acquired in the course. This course will also center on the development of software utilizing OOP concepts. A research component will investigate computer issues pertaining to the ethical use of computers and the use of information technology and its impact in the community

**Class Requirements**

3-Ring Binder with note paper  
Materials: Pens, Pencils, Hi-Liters, Disk or USB key for storage of files and items not limited to the list above.

Student Responsibility

Students must seek assistance from fellow students and the teacher for all work missed due to absence and must make arrangements to complete missed work.

**Course Requirements/Department Policies**

Late Assignments

Late assignments must be accompanied with a note signed by a parent or guardian stating the reason for tardiness of the assignment. The note must list the due date of the assignment and the actual date of submission.

*If an assignment is handed in after it has been taken up/handed back, the student may not receive a mark for it.*

Missed Tests

It is the student's responsibility to make arrangements, ahead of time, for any tests/quizzes that are missed. If a student misses a test/quiz for an unforeseen reason such as illness, the student must bring a note signed by a parent or guardian and be prepared to write the test/quiz immediately upon return to school.

**Assessment Strategies**

Projects./Assignments: include textbook exercises, teacher generated, research assignments  
Tests, Quizzes: chapter tests, unit tests (At least 6 days noticed), quizzes (Unannounced – "Pop quizzes")  
Major Assignment: mini project 2 weeks to complete with subcomponents

**Achievement Categories and Weighting**

- Knowledge and Understanding 20%
- Thinking and Inquiry 15%
- Communication 15%
- Application 30%

**Achievement Expectation**

- Problem Solving
- Logic and Design
- Programming and Concepts/Skills
- Research (written and oral)

**Learning Skills**

- Works Independently
- Team work
- Organization
- Work Habits
- Initiative

**Evaluation**

MARK BREAKDOWN

- Design of software code (program logic and design)
- Program Execution and Usage
- Demonstration of critical thinking skills
- Program Specifications and Coding Style
- Concise detail of program comments/internal documentation
- Analysis of programming techniques and algorithm(s)
- Creativity, Design of User Interface (End User prospective)
  
- Demonstrates concise writing skills, with a focus on ideas, clarity, accuracy and coherence
- Editing to produce final drafts, using the writing process

FINAL MARK

Year's Work: 70%  
(see Achievement Categories and Weighting)

Final Summative Evaluation 30%  
(April/May)



## **Course Outline ICS4M**

### Textbook

There is no textbook for this course. The Computer Department has several resource books available for the student to use during class time only. Students are expected and responsible to take their own notes during class lectures.

Course Content: This course will use JAVA 1.4.2 (Topics may not be presented in order shown.)

Problem Solving

Output

Variables & Constants – Primitive and Reference Types

Input

Mathematical Functions - standard math operations, MOD, DIV, exponents

Decisions - IF & Relational Operators

Repetition - FOR, WHILE & DO... WHILE

Mini Project I - Topic TBA

Methods - passing multiple parameters, pass by value and pass by reference

Classes - Built in and programmer created

Mini Project II - Topic TBA

Arrays - Single, Two Dimension

Mini Project III - Topic TBA

Applets (GUI)

Layouts

Buttons

Text Boxes

User Interaction

Summative Project