RIVERSIDE MILITARY ACADEMY
Gainesville, Georgia

Syllabus For Computer Science 1, 2010-2011

RMA Mission Statement
The mission of Riverside Military Academy is to prepare ethical young men of character for success in college and in life through the provision of a rigorous academic program, leadership opportunities, competitive athletics, extensive co-curricular activities, and the structure and discipline inherent in a military preparatory school environment.

1. COURSE OVERVIEW:

Description. CS1- Computer Science 1 is a required core course designed for 9 - 12 grade students. This intermediate computer course provides experience with essential computer concepts, and popular application software as related to business, including word processing, spreadsheets and graphics, database management, and multimedia presentation software. In addition to mastery of computer applications, programming and graphic design are introduced as applied to various industries. Throughout the course each student will be supervised and exposed to research methods on the Internet. MLA document formatting and editing will be emphasized. Course length: 2 semesters

Instructor. Major Hector Salas, MBA, Business and Computer Science Career and Technical Educator

Course Purpose. Although computer science is an established discipline at the collegiate and post-graduate levels, its integration into the K-12 curriculum has not kept pace in the U.S. As a result, a serious shortage of information technologists exists at all levels. (Final Report of the ACM Task Force Curriculum Committee, published by the Computer Science Teachers Association, 2003)

The CS1- Computer Science 1 course provides students with all the instruction necessary to become a proficient user of the most popular suite of applications. At Riverside Military Academy, Computer Science 1 students are required to have knowledge and understanding of:

Semester 1:	Week 1
Unit 1. Essential Computer Concepts	Week 2
Unit 2: Keyboarding Skills	Week 3-4
Unit 3: Microsoft Word	Week 5-6
Unit 4: Graphics Design	Week 7-9
Unit 5: Microsoft PowerPoint	Week 10-14
Unit 6: HTML Programming (Web design)	Week 15-16
ISAL & Final Projects	
Semester 2:	Week 1-4
Unit 7: Microsoft Excel (Spreadsheets & Charts)	Week 5-6
Unit 8: Microsoft Publisher	Week 7-9
Unit 9: Microsoft Access	Week 10-12
Unit 10: Microsoft FrontPage (IWD)	Week 13-14
Unit 11: Introduction Programming	Week 15-16
ISAL & Final Projects	

In addition, students have the opportunity to participate in the *Independent Study Active Learning* (ISAL) program. Students may engage in this program after completing the core set of instruction for the day. This allows fast paced students to focus in a special interest area and expand their experience in computer science. The special interest area topics availability will vary at times. ISAL course guide is not outlined in this document. See the *RMA Computer Science ISAL Guide*. Students approved for ISAL may elect from the following:

- *Database Administration* including web database development
- *Programming using Visual Basic or QBasic*

- *Graphics Art and Design including Animation (GIF, SWF, AVI)*
- *Programming for the Web* (ASP, PHP, DHTML, CSS, JavaScript)
- *AutoCAD* – Computer Aided Design

2. OBJECTIVES:

GADOE Quality Core Curriculum Standards. In compliance with the Quality Basic Education Act of 1986, the Quality Core Curriculum Standards is a statewide basic curriculum, which includes the competencies that all students must master before completion of high school. Upon completion of the Computer Applications course, students should meet the standards stated below.

Computer Science 1 –Core Course Goals

Upon completion of the CS1- Computer Science 1 course, students should be able to:

1. Demonstrate mastery of the system's graphical user interface to work with information.
2. Demonstrate mastery of basic word processing functions.
3. Employ advanced word processing concepts.
4. Plan and create the structure of a relational database.
5. Use a relational database to store/retrieve/analyze information.
6. Demonstrate mastery of the basic spreadsheet application functions and features.
7. Employ advanced spreadsheet concepts.
8. Demonstrate mastery of basic desktop publishing functions.
9. Employ advanced desktop publishing functions.
10. Demonstrate mastery of basic presentation software functions.
11. Employ advanced presentation software functions.
12. Plan and create the structure of a web site
13. Demonstrate mastery of basic internet programming functions
14. Demonstrate knowledge of basic programming language concepts.
15. Demonstrate mastery of basic graphic manipulation functions and techniques

Goals For Student Learning - Performance Indicators. The Curriculum Study defines the expectation for student learning. The methods, instruments, or practices (related to computer science 1) that will be implemented to monitor and measure progress of student achievement in pursuit of the desired result (AREA) are shown in the 1st through 4th Quarter, and are tied to the performance indicators as identified in the RMA School Improvement Plan 2000.

3. RELATION TO INSTITUTIONAL GOALS:

This course was developed with the Institutional Goals in mind. For example, (1) employ technology to include fluency in the use of contemporary computer hardware and software, (2) integrate communications into all curricula so that cadets read with comprehension, write with clarity, and speak with confidence and poise, and (3) improve the quality of academic instruction through interactive methods of teaching, effective use of audio visuals, and professional development.

4. GRADING PHILOSOPHY:

C indicates satisfactory work, which shows a basic knowledge of the material but not mastery. B is for commendable work, which shows near mastery. A is for outstanding work, which shows mastery of the material as well as original insight. F is for the unacceptable.

5. GRADE CALCULATION:

Assessment. In addition to the Review Questions, Projects and Critical Thinking Activities the teacher may assess students by reviewing portfolio selections, authentic student products, and homework. The quality of completed projects (appropriateness, correctness, worthy or valued as a business transacts, meets the critical elements expressed/taught or

published, willingness to demonstrate mastery, and ability to expand on the concept if enabled - will all be subjected to assessment.

Grading Procedures. Per quarter there will be seven 100-point test, quizzes or projects. At the end of the semester there will be one 100-point cumulative exam or project. Your class binder will be weighted at 100-point maximum, if it complies with the portfolio guide. Thus, points/grades are accumulative average of your work.

Projects and Homework. Projects including homework may be assigned at every class meeting. Homework will be collected at the start of the next class session/meeting. **No late project is accepted, even for legitimate reasons.** Full credit is given if done and work is clearly shown. No credit is given for answers only. No credit will be given for incomplete project assignments. Weekly grade will be affected by poor or incomplete work.

Quizzes. Short ten-minute quizzes maybe given at anytime throughout the course. The quizzes will be based on homework and/or class assignments. Tutorial will be mandatory for poor test/quiz grades.

Drops. There are **no dropped quizzes or major project grade** in this course, thus a missed quiz or major project counts as a zero.

Make-up. There will be **no make-up quizzes or exams**. Note that there is no excuse for missing an exam or quiz. However, you may arrange to take an exam or quiz early for a valid reason. If it is necessary to miss an exam because of a documented emergency, sport, or approved leave you should notify the instructor as soon as possible. Also, no make-up quiz or exam will be given for poor quiz/test grade earned, however tutorial will still be mandatory.

Final Exam. The final exam consists of approximately 100 questions of various types, not just multiple-choice type questions.

Portfolios. Portfolios will be collected and graded approximately 4 times during the semester. Portfolios are cumulative and should contain up-to-date samples of your work, all quizzes with corrections completed according to instructions given by your instructor, all in-class special assignments, and other papers as requested by your instructor. Portfolios will not be accepted late for grading. See "CS Portfolio Guidelines" for more details.

6. LATE WORK POLICY:

In order to be considered on time, work must be submitted at the beginning of the class period. If **daily work** is late it will be penalized 25 points, and the cadet will be required to make it up during Opportunity Time that day; or if there is a legitimate conflict, he will be allowed 24 hours from the initial class time to submit the work with the same penalty. If the work is not submitted within 24 hours, it will receive a 0. If a **major assignment** is late, it will be penalized a letter grade for each calendar day it is late.

7. PROCEDURES:

Instructional Strategies. Each unit of instruction may be cover in one to four weeks the essential knowledge and skills required for students to be successful in the workplace and in college classes requiring proficiency in computer applications. Through the study of the appropriate use of the productivity features of an application, students learn to make informed decisions about productivity software and their application in the workplace. The lesson exercises and projects provide opportunities for students to relate their learning to real world issues outside the classroom. In addition, each unit provides opportunities to explore applications of higher order thinking skills and to investigate new approaches in applying their learning. Critical Thinking Activities will give the student an opportunity to apply problem-solving strategies, synthesize knowledge, employ solutions and evaluate the results.

Instructor Led-Activities. Instructor led-activities include a set of essential knowledge and skills for the subject matter being studied. Each activity and interaction will reflect our commitment to equity, an appreciation of diversity, and recognize different ways of learning. By teaching with the 4MAT method and using projects, we provide the opportunity for students to explore applications of higher order thinking skills and to investigate new approaches in

applying new learning. Also by integrating and implementing 4MAT Teaching Method the curriculum will foster the active involvement of students in the learning process.

8. TEXTS & MATERIALS.

The items listed are intended to promote learning in which the students gain knowledge and understandings through a variety of resources and instructional approaches. These also provide the student with the opportunity for learning beyond the classroom to improve mastery of the subject matter taught.

1. Textbook – Microsoft Office 2000, Authors: Pasewark & Pasewark, Southwestern, 2000
2. Computer technology instructional videos and Tech TV - television programming
3. Informational Technology newspapers, magazines, pamphlets, brochures
4. Internet sites featuring computer-related content, and basic skill development.
5. RMA library collections, and classroom library collection (approved by department chair)
6. RMA Computer Club (after school program).
7. Intranet - Computer Science 1 website (located on the RMA Web server - http://rmacsgs02). Internet - RMA Bridge to Classroom (Moodle.rmapodcasts.com). Extranet – Computer Science (HectorSalas.com) for suspended or day student use off campus.

PART 2
PACING GUIDE
(a.ka. SCOPE AND SEQUENCE)

Semester 1- Week 1

UNIT 1: Essential Computer Concepts

DESCRIPTION: Students are introduced to the Windows Operating System, the graphical user interface for navigating within windows and the network, and logon/logoff procedures. In addition computer usage policies, security, and regulations that go along with computer ethics are also covered. Discusses ion on how computer systems work and why it performs as it does. The students do exploration of the internal parts of a modern computer and the basic input and output systems.

UNIT OBJECTIVES: Demonstrate mastery of the graphical user interface. Identify appropriate usage of the computer. Explain how computers work. Identify the basic input and output systems.

Semester 1- Week 2

UNIT 2: Keyboarding Skills for Computers

DESCRIPTION: Building Keyboarding Skills for Computers is an essential skill required to key faster and more accurately every time you use a computer. The "hunt and peck" system is not fun and besides it makes for long hours of sitting, hunting, pecking, hunched over just to create a report for class or the workplace. Keyboarding Skills for Computers consist of ten skill builder exercises to get your best WAM and EAM. A Timed Writing Progress Chart provides immediate feedback on your progress and a Techniques Checklist allows you to spot the areas needing improvement. With the right attitude, the right position, and keyboarding skills you will improve your touch system and increase your enjoyment while using the computer.

UNIT OBJECTIVES: Demonstrate the right attitude, ready position, and keyboarding skills to key faster and more accurately using the touch system.

Semester 1- Week 3-4

UNIT 3: Introduction to Microsoft Word

UNIT DESCRIPTION: Microsoft Word is an application tool in the Microsoft Office suite that can help you to create professional looking documents such as letters and reports. Word processing using Microsoft Word provides the ability to create documents for school, the workplace, personal writing and many other activities that required text and images.

This unit of instruction will also cover the MLA format required of academic disciplines for producing reports and research papers.

UNIT OBJECTIVES: Demonstrate ability to use Microsoft Word to create, format and revise word processing documents such as simple reports with tables, newsletters with pictures, and even documents that can be published to the Web. In addition, the student must be able to create and revise academic reports using the MLA format.

Semester 1 - Week 5-6

UNIT 4: Graphics Design

UNIT DESCRIPTION: The Graphic Design unit consist of creating and modifying images for use with other computer applications such as, but not limited to, web authoring software, presentation software, and desktop publishing. This unit of instruction will include graphic design, using manipulating features and techniques, creating animations, and applying effects, transitions, and mixed media for online and traditional documentation for school, the workplace, personal writing and many other activities that required mixed content.

UNIT OBJECTIVES: Demonstrate ability to use graphic creation and editing software. Demonstrate mastery of basic graphic manipulation functions and techniques.

Semester 1- Week 7-9

UNIT 5: Introduction to Microsoft PowerPoint

UNIT DESCRIPTION: PowerPoint is an application tool in the Microsoft Office suite that can help you to create professional presentations. In PowerPoint you can create slides, outlines, speaker's notes, and handouts for your audience. A presentation can include text, graphics, charts, tables, sound and video clips. Multimedia presentations accompanied often by a speaker in their own voice, are used in business to inform, persuade, instruct, and even entertain a specific audience.

UNIT OBJECTIVES: Demonstrate ability to use Microsoft PowerPoint to design (within "Best" practices guidelines) and delivery a successful multimedia presentation.

Semester 1- Week 10-14

UNIT 6: HTML Programming

UNIT DESCRIPTION: HTML, Hypertext Markup Language, is the text formatting language of the World Wide Web. The fast growth of the web, and the popularity of Netscape's Navigator and Microsoft's Internet Explorer, have led both to add tags not part of the HTML 4.0 specifications. This course is designed to help the HTML writer who must keep up to date with fast changing world of HTML in order to determine the collection of tags to best display document contents. HTML Programming for the web includes using HTML, CSS, and JavaScript (CSS and JS are advance students only with prior HTML knowledge). Students will learn how to use the latest e-tools to implement web design concepts and principles for a successful web site. With plenty of hands-on exercises, students will master the basics and experience creating a dynamic web site that will prepare them with the skills needed in today's society. Study Skills for HTML programming are also introduced.

UNIT OBJECTIVES: Upon completion of this course each student will:

1. Know how the web works, what browsers are, and what is HTML
2. Know HTML Tags and the basic structure of a web page
3. Change the size and color of text, background color, and headings
4. Use color and type to best portray personal or company image.
5. Effectively use tags to control layout; tables and frames
6. Put Links and images on web page and align text with images
7. Publish page onto the Web

Semester 1 - Week 15-16

ISAL – Programming & Final Projects

SEMESTER 2 (SPRING)

Semester 2 - Week 1-4

UNIT 7: Introduction to Microsoft Excel

UNIT DESCRIPTION: Microsoft Excel is the spreadsheet application tool in the MS Office Suite. Spreadsheets are reports that are used for business and financial applications that analyze data in a table format. Any data that needs analysis using formulas that can be arranged in a table should be in a spreadsheet. The same data can be represented with charts or graphs once the data is collected and arranged in a spreadsheet.

UNIT OBJECTIVES: Demonstrate ability to use Microsoft Excel to create a collection of spreadsheets to solve problems that involve complex and repetitious calculations. In addition, the student must be able to create an appropriate graph or chart to represent the data collection, and trouble shoot problems in the spreadsheet and formula design.

Semester 2 - Week 5-6

UNIT 8: Microsoft Publisher

UNIT DESCRIPTION: The Microsoft publisher 2000 for windows course provides a student with the practical experience and necessary skills to create a basic publication, incorporating features for greater effectiveness and appeal, using Microsoft Publisher 2000. Students will learn to create customized documents from scratch. Students will create a multi-page document, import and format text and graphics, and create the document's layout.

UNIT OBJECTIVES:

1. Navigate in the Microsoft Publisher environment.
2. Create new multi-page documents.
3. Import text and graphics from other applications.
4. Format text using fonts, sizes, type styles, and line spacing.
5. Use alignments, tabs, and indents to align text.
6. Create common elements such as page numbers and design guides that will appear on each page.
7. Create documents containing multiple columns.
8. Wrap text around graphics.

Semester 2 - Week 7-9

UNIT 9: Introduction to Microsoft Access

UNIT DESCRIPTION: This is a hands-on course. Through the study of the appropriate use of a database management system (DBMS), and the Microsoft Access application, students will learn to make informed decisions about DBMS technologies and their applications. The Microsoft Access lesson projects will be used to actually apply the techniques covered. Critical Thinking Activities will give the student an opportunity to apply creative analysis and use the help system to solve problems. Students will study problem-solving strategies, synthesize knowledge, create a solution and evaluate the results.

UNIT OBJECTIVES: Demonstrate ability to use Microsoft Access to design a computerized database management system that would store data, retrieve data via queries, analyze and trouble shoot problems in the database design, and print reports that reflect information collected in the database.

Semester 2 - Week 10-12

UNIT 10: Introduction to Microsoft FrontPage

UNIT DESCRIPTION: FrontPage is an application tool in the Microsoft Office suite designed to help you develop dynamic, interactive World Wide Web sites. With FrontPage management features you can easily organize and maintain numerous files, folders and objects that make up a Web site. This unit will also cover the Design Process, multimedia for the Web and publishing techniques to upload your site once you are done creating your web pages. The challenge to “Building the Perfect Web Site” is a favorite among Web Fans!

UNIT OBJECTIVES: Demonstrate ability to use Microsoft FrontPage to design (within "Best" practices guidelines), develop, implement, and maintain Web pages and a Web site.

Semester 2 - Week 10-12

UNIT 11: Introduction to Programming

UNIT DESCRIPTION: Introduction to Programming will consist of QBASIC programming language. We will start out relatively fast at the beginning, introducing numerous commands and explaining constants and numeric variables. We start out relatively fast so that you can begin writing small programs right away, instead of having to wait for two or three days to learn all the necessary commands. Then we will fully explore the most common switches, attributes, or options to modify the behavior of the commands in your programs. This way, you will have the tools necessary to write programs, yet not be overwhelmed with the flexibility of the commands. More will be available for those students who wish advance features of programming, near the end of the series, including Boolean operators, trigonometric functions, etc. Although we will touch on it briefly, it is beyond the scope of this series to thoroughly teach concepts of flowcharting, recursive programming, etc.

UNIT OBJECTIVES: Demonstrate knowledge of basic programming language concepts.

Semester 2 - Week 15-16

ISAL & Final Projects

PART 3

MISCELLANEOUS

OFFICE HOURS
I'm available during regular scheduled ***Tutorial*** hours. This time is for consultation with you. You are encouraged to make use of this time to discuss homework, course material, or personal progress. Appointment or private consultations with the Dean, parents, and myself will be arranged for failure to follow instructions more then twice. Student may send messages to my e-mail: hsalas@cadet.com.

GETTING HELP
1. Tutoring: Free tutoring is available. See your academic course schedule for Tutorial Period hours.
2. Extra practice and review: Use the reviews and chapter tests at the end of each chapter for extra practice and review.
3. Study groups: Get together with other class members and form a study group which meets regularly to do homework and study.
4. Office hours: Take advantage of office hours to get help from your instructor.
5. Computer tutorials: There are many on-line resources that provide free tutorials, in an interactive format to reinforce learning. Use your Internet surf time wisely and expand your mind.
6. For self-study visit my teacher page, *Computer Science with Major Salas*, on the RMA Intranet. There are many learning resources on my teacher page that provide the opportunity beyond the classroom to improve learning.

ATTENDANCE POLICY
Attendance is an important element in your academic success. To be successful, you must attend class and complete homework assignments. Some students, for various reasons, may miss class. It is the sole responsibility of the student who misses class to learn the material covered the day of the absence.

ACADEMIC HONESTY
I fully support Riverside Military Academy's belief that academic honesty is a cornerstone of the educational community. To that end, I expect academic honesty of my students. Students who bring unauthorized material to a test or copy from another's test will receive a zero on that test. Removal of reserve materials from the LRC is considered an

act of academic dishonesty. Doing your homework in groups is encouraged, however copying someone else's homework or allowing someone else to copy your homework is considered an act of academic dishonesty.

CM/POC:

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Business and Computer Science Career and Technical Educator

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