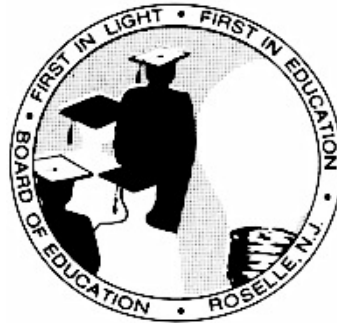


Roselle Public Schools



Career and Technical Education Curriculum

Computer Science II

Grade 11



Mission

The Roselle Public School District is committed to and will prepare ALL of our students for college, work, and life. We will provide a safe, clean, positive and supportive learning environment in which ALL students can successfully develop socially, emotionally and academically into lifelong learners and responsible, productive citizens. We will continually strengthen and align our curriculum with state, national and international standards that are engaging, rigorous, relevant, and implemented consistently. We will ensure that all students, parents, staff, and community members are respected and informed in our family friendly schools. We will strive to motivate all of our students through various innovative instructional strategies, methods and techniques. Utilizing students' skills, talents, and unique abilities, we will prepare them to meet the demands of an ever changing competitive 21st Century global society.

Vision

To prepare ALL our students for college, work and life in high achieving Roselle Public Schools.

Core Beliefs

- High Academic Achievement is a priority.
- Continuous improvement is essential.
- Learning is a lifelong process.
- Students, staff, parents and community members are partners in education and all have a personal responsibility in the educational process.
- Every school in Roselle can be a high performing school.
- Curriculum and instruction must foster 21st Century skills.
- Our schools must be clean, safe, orderly, welcoming and nurturing environments where all students and staff can focus on and engage in the process of teaching and learning.
- All children have skills, talents and unique abilities.
- Children are our greatest resource and the key to our global future.
- All children can learn and shall be provided equitable opportunities for a quality, relevant education.
- Preparing our students for college, work and life is a priority.
- Our students deserve and have a right to high quality effective Principals and Teachers.



<h1>21st Century Skills</h1>		
LEARNING & INNOVATION	INFORMATION, MEDIA & TECHNOLOGY SKILLS	LIFE & CAREER SKILLS
<p>Creativity and Innovation</p> <ul style="list-style-type: none"> <input type="checkbox"/> Think Creatively <input type="checkbox"/> Work Creatively with Others <input type="checkbox"/> Implement Innovations <p>Critical Thinking and Problem Solving</p> <ul style="list-style-type: none"> <input type="checkbox"/> Reason Effectively <input type="checkbox"/> Use Systems Thinking <input type="checkbox"/> Make Judgments and Decisions <p><input type="checkbox"/> Solve Problems</p> <p>Communication and Collaboration</p> <ul style="list-style-type: none"> <input type="checkbox"/> Communicate Clearly <input type="checkbox"/> Collaborate with Others 	<p>Information Literacy</p> <ul style="list-style-type: none"> <input type="checkbox"/> Access and /evaluate Information <input type="checkbox"/> Use and Manage Information <p>Media Literacy</p> <ul style="list-style-type: none"> <input type="checkbox"/> Analyze Media <input type="checkbox"/> Create Media Products <p>Information, Communications and Technology (ICT Literacy)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Apply Technology Effectively 	<p>Flexibility and Adaptability</p> <ul style="list-style-type: none"> <input type="checkbox"/> Adapt to Change <input type="checkbox"/> Be Flexible <p>Initiative and Self-Direction</p> <ul style="list-style-type: none"> <input type="checkbox"/> Manage Goals and Time <input type="checkbox"/> Work Independently <input type="checkbox"/> Be Self-Directed Learners <p>Social and Cross-Cultural</p> <ul style="list-style-type: none"> <input type="checkbox"/> Interact Effectively with Others <input type="checkbox"/> Work Effectively in Diverse Teams <p>Productivity and Accountability</p> <ul style="list-style-type: none"> <input type="checkbox"/> Manage Projects <input type="checkbox"/> Produce Results <p>Leadership and Responsibility</p> <ul style="list-style-type: none"> <input type="checkbox"/> Guide and Lead Others <input type="checkbox"/> Be Responsible to Others



Career Ready Practices

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

CRP1	Act as a responsible and contributing citizen and employee
CRP2	Apply appropriate academic and technical skills
CRP3	Attend to personal health and financial well-being
CRP4	Communicate clearly and effectively and with reason
CRP5	Consider the environmental, social and economic impacts of decisions
CRP6	Demonstrate creativity and innovation
CRP7	Employ valid and reliable research strategies
CRP8	Utilize critical thinking to make sense of problems and persevere in solving them
CRP9	Model integrity, ethical leadership and effective management
CRP10	Plan education and career paths aligned to personal goals
CRP11	Use technology to enhance productivity
CRP12	Work productively in teams while using cultural global competence



Standards	
Career Cluster	INFORMATION TECHNOLOGY (IT)
9.3.IT. 1	Demonstrate effective professional communication skills and practices that enable positive customer relationships.
9.3.IT. 2	Use product or service design processes and guidelines to produce quality information technology (IT) product or service
9.3.IT. 3	Demonstrate the use of cross-functional teams in achieving IT project goals.
9.3.IT. 4	Demonstrate positive cyber citizenship by applying industry accepted ethical practices and behaviors.
9.3.IT. 5	Explain the implications of IT on business development
9.3.IT. 6	Describe trends emerging and evolving computer technologies and their influence on IT practices
9.3.IT. 7	Perform standard computer backup and restore procedures to protect IT information
9.3.IT. 8	Recognize and analyze potential IT security threats to develop and maintain security requirements
9.3.IT. 9	Describe quality assurance practices and methods employed in producing and providing IT products and services
9.3.IT. 10	Describe the use of computer forensics to prevent and solve information technology crimes and security breaches
9.3.IT. 11	NA
9.3.IT. 12	Demonstrate knowledge of hardware components associated with information systems
9.3.IT. 13	Compare key functions and applications of software and determine maintenance strategies for computer systems.
Pathway	PROGRAMMING & SOFTWARE DEVELOPMENT (IT-PRG)
9.3. IT-PRG.1	Analyze customer software needs and requirements
9.3. IT-PRG.2	Demonstrate the use of industry standard strategies and project planning to meet customer specifications.
9.3. IT-PRG.3	Analyze system and software requirements to ensure maximum operating efficiency
9.3. IT-PRG.4	Demonstrate the effective use of software development tools to develop software applications
9.3. IT-PRG.5	Apply an appropriate software development process to design a software application.
9.3. IT-PRG.6	Program a computer application using the appropriate programming language.
9.3. IT-PRG.7	Demonstrate software testing procedures to ensure quality
9.3. IT-PRG.8	Perform quality assurance task as part of the software development cycle
9.3. IT-PRG.9	Perform software maintenance and customer support functions
9.3. IT-PRG.10	Design, create and maintain database



GUIDELINES FOR ADAPTING INSTRUCTIONAL MATERIALS FOR STUDENTS WITH DISABILITIES AND STUDENTS AT RISK

Problem	Adaptation / Strategies	
Enlarge Print		
Visual Perception, Visual Skills for Reading Behavior	<ul style="list-style-type: none"> • Retype materials on primary typewriter • Utilize individual magnifying glasses 	<ul style="list-style-type: none"> • Project material on wall using opaque projector • Enlarge font within document
Reduce Distraction on Page		
Visual Perception, Visual Skills in Reading, Spelling, Computation, Behavior, Arithmetic Readiness, Problem Solving	<ul style="list-style-type: none"> • Reduce problems or items on page • Frame specific items on page 	<ul style="list-style-type: none"> • Cover area on page to reduce items
Enlarge Space In Which Student Responds		
Visual Perception, Handwriting, Motor, Behavior	<ul style="list-style-type: none"> • Provide separate answer sheet with space for response • Provide blackboard/whiteboard for written response 	
Color Code Material		
Visual Skills in Reading, Reading Comprehension, Spelling, Memory, Perception, Problem Solving, Computation, Behavior	<ul style="list-style-type: none"> • Color code topic sentence in reading test and supporting sentences in another color • Color code directions, examples, and problems in different colors • Color code math symbols (= + - x) for easy recognition 	
Utilize Arrows for Directionality		
Visual Perception, Visual Skills in Reading, Spelling, Handwriting, Motor, Perception, Arithmetic Readiness, Computation, Behavior	<ul style="list-style-type: none"> • Provide arrows as cues for following obstacle course • Utilize arrows to indicate direction of math operations on number line 	<ul style="list-style-type: none"> • Provide arrows at top of worksheet or tape on desk as a reminder of left to right progression in reading or writing
Modify Vocabulary		
Reading Comprehension, Inner Language, Receptive Language, Problem Solving, Behavior	<ul style="list-style-type: none"> • Rewrite directions in workbook • Provide vocabulary list with synonyms or simplified directions • Instructor gives information or directions in simplified terms 	
Tape Record Material		
Reading Comprehension, Auditory Skills in Reading, Auditory Perception, Receptive Language, Memory, Problem Solving, Behavior, Arithmetic Readiness, Computation	<ul style="list-style-type: none"> • Record directions for learner to refer to • Record test; verbal or written learner response • Record passage; learner follows written text 	



I. Course Description

Course name: Computer Science II – Internet Technologies

Web Design and Computer Science II is a full year course for students continuing in the Academy of Information Technology. The AoIT set of courses is designed to introduce, develop and reinforce the essential skills in Information Technology that is vital for success in today's world. The main aspect of this second year course is to provide an introduction and development to programming logic and industry software and technologies that are used to develop and design web sites.

Current industry standard software and techniques are used. Microsoft **WORD**, **EXCEL** and **PowerPoint** are used for documentation and presentation tasks. **Hypertext Mark-Up Language** (HTML), **JavaScript** and Adobe **FLASH**, **PhotoShop** and **Dreamweaver** are used for web site design and development. This AoIT course also provides continued development to computer literacy, business application software, text editors, code generators and Graphical User Interfaces.

Possible jobs in the field	Median wages state	Median wages national
Computer network support specialist	\$65.300	\$59.100
Computer programmer	\$82.200	\$74.300
Software developer, applications	\$93.700	\$90.100
Software developer, systems software	\$107.300	\$99.000
Web developers	\$70.200	\$62.500



II. OBJECTIVES

Upon completion of Computer Science II, the students will be able to:

A. Analyze, define and solve a given problem
B. Develop algorithms used in problem solving techniques
C. Identify careers related to Information Technology
D. Discuss current issues relating to Information Technology
E. Understand and practice safety techniques
F. Design documentation using Microsoft WORD and EXCEL
G. Design presentation materials using Microsoft PowerPoint
H. Design web based applications using JavaScript
I. Design web based applications using FLASH
J. Design web based applications using PhotoShop
K. Design web based applications using Dreamweaver



III. Software, Textbooks and Instructional Materials

A . Software

1. Adobe Creative Suite 3 Web Premium
 - a. PHOTOSHOP
 - b. FLASH
 - c. DREAMWEAVER
2. HTML
3. JavaScript
4. Microsoft Office
 - a. WORD
 - b. EXCEL
 - c. POWERPOINT
5. Internet
6. Notepad

B. Resources

1. Adobe Dreamweaver CS3 –
Comprehensive Concepts and Techniques
Shelly Cashman Series
Gary Shelly, Thomas Cashman, Dolores
Wells and Steven Freund
Course Technology - Boston – 2009
ISBN : 14239-1242-X
2. Adobe Photoshop Revealed CS3
Jim Shuman
Thomson Course Technology - 2008
ISBN : 1-4263-2539-1238
3. Creating Web Pages with HTML and
Dynamic HTML
Patrick Carey
Thomson Course Technology – 2001
ISBN : 0619-01969-7
4. Adobe Web Collection Revealed –
Premium Edition
Sherry Bishop, Jim Shuman, Elizabeth
Eisner Reding
Thomson Course Technology – 2008
ISBN : 978-1-4283-4083-1
5. Adobe FLASH CS3 Revealed
Jim Shuman
Thompson Course Technology – 2008
ISBN : 978-1-4283-1963-9



IV. INSTRUCTIONAL STRATEGIES

Web Design and Computer Science I encompasses many different types of open-ended problems of a mathematical or business nature. The goal of Computer Science I is to develop computer literacy skills and to introduce and develop web based design and creation skills.

Microsoft Office skills are introduced, developed and reinforced that eventually will be used for independent presentations and to solve business problems.

Therefore, all students must demonstrate the following skills:

1. Critical thinking
2. Decision making
3. Software engineering
4. Use of technologies
5. Self-management skills
6. Time-management skills
7. Teamwork

In order to apply these skills, the instructional strategies will incorporate solving a number of case studies. By analyzing these open-ended problems, students apply all of the above skills in great detail. They create a model solution by applying the divide and conquer technique.

V. COURSE OUTLINE

1. HTML / DHTML
 - A. Review of CS3
 - B. Javascript Programming
 - C. Javascript Objects and Events
 - D. MultiMedia
 - E. Dynamic Page Layout
 - F. Dynamic Content
 - G. Special effects
 - H. Event Model
 - I. Windows and Frames



Roselle Public Schools

2. JavaScript

- A. Introduction
- B. Scripting Basics / Programming Control Structures
- C. Images
- D. Frames
- E. Window
- F. Forms
- G. Dynamic Pages
- H. Events
- I. Cookies

3. DREAMWEAVER

- A Introduction to CS3
- B. Creating a Local Site
- C. Web Pages, Links and Images
- D. Tables and Page Layout
- E. Forms
- F. Templates and Style Sheets
- G. Absolute Positioning, Image Maps and Navigation Bars
- H. Frames

4. FLASH

- A. Introduction
- B. Flash Environment
- C. Objects
- D. Symbols and Interactivity
- E. Animations
- F. Special Effects
- G. Publishing Movies
- H. Graphics
- I. Actionscript
- J. Sound and Video
- K. Behaviors



Roselle Public Schools

5. PHOTOSHOP

- A. Editing an Image
- B. Selection Tools
- C. Layers
- D. Drawing and Painting with Color

6. Microsoft Office

- A. WORD
- B. EXCEL
- C. POWERPOINT

7. Computer Literacy

- A. The System Unit
- B. Hardware

8. Projects / Presentations

9. Safety

10. Career



Roselle Public Schools

VI. EVALUATION, PROFICIENCIES and CCCS

A. Evaluation:

Tests
Quizzes
Labs / projects
Homework / Notebook
Participation

B. Proficiencies:

Upon completion of Computer Science II, the student will be able to:

- A . Analyze, define and solve a given problem
- B. Develop algorithms used in problem solving
- C. Identify careers related to Information Technology
- D. Discuss current issues relating to Information Technology
- E. Understand and practice safety
- F. Design documentation using Microsoft **WORD** and **EXCEL**
- G. Design presentation materials using Microsoft **PowerPoint**
- H. Design web based applications using **JavaScript**
- I. Design web based applications using Adobe **FLASH**
- J. Design web based applications using Adobe **PhotoShop**
- K. Design web based applications using Adobe **Dreamweaver**



C. CCCS

- 8.1.12.A.1 - Construct a spreadsheet, enter data, and use mathematical or logical functions to manipulate data, generate charts and graphs, and interpret the results.
- 8.1.12.A.2 - Produce and edit a multi-page document for a commercial or professional audience using desktop publishing and/or graphics software.
- 8.1.12.A.4 - Create a personalized digital portfolio that contains a résumé, exemplary projects, and activities, which together reflect personal and academic interests, achievements, and career aspirations.
- 8.1.12.D.1 - Evaluate policies on unauthorized electronic access (e.g., hacking) and disclosure and on dissemination of personal information.
- 8.1.12.D.2 - Demonstrate appropriate use of copyrights as well as fair use and Creative Commons guidelines.
- 8.1.12.D.3 - Compare and contrast international government policies on filters for censorship.
- 8.1.12.D.4 - Explain the impact of cyber crimes on society.
- 8.1.12.E.1 - Develop a systematic plan of investigation with peers and experts from other countries to
- 8.2.12.G.1 - Analyze the interactions among various technologies and collaborate to create a product or system demonstrating their interactivity.

D. Common Core State Standards Alignment

READING

Key Ideas and Details: CCSS.ELA-LITERACY.RI.11-12.1 - CCSS.ELA-LITERACY.RI.11-12.2 - CCSS.ELA-LITERACY.RI.11-12.3

Craft & Structure: CCSS.ELA-LITERACY.RI.11-12.4 - CCSS.ELA-LITERACY.RI.11-12.5 - CCSS.ELA-LITERACY.RI.11-12.6

Integration of Knowledge and Ideas: CCSS.ELA-LITERACY.RI.11-12.7 - CCSS.ELA-LITERACY.RI.11-12.8

WRITING

Text Types and Purposes: CCSS.ELA-LITERACY.W.11-12.1 - CCSS.ELA-LITERACY.W.11-12.1.A - CCSS.ELA-LITERACY.W.11-12.1.B - CCSS.ELA-LITERACY.W.11-12.1.C - CCSS.ELA-LITERACY.W.11-12.1.D - CCSS.ELA-LITERACY.W.11-12.1.E - CCSS.ELA-LITERACY.W.11-12.2 - CCSS.ELA-LITERACY.W.11-12.2.A - CCSS.ELA-LITERACY.W.11-12.2.B - CCSS.ELA-LITERACY.W.11-12.2.C - CCSS.ELA-LITERACY.W.11-12.2.D - CCSS.ELA-LITERACY.W.11-12.2.E - CCSS.ELA-LITERACY.W.11-12.2.F - CCSS.ELA-LITERACY.W.11-12.3 - CCSS.ELA-LITERACY.W.11-12.3.A - CCSS.ELA-LITERACY.W.11-12.3.E

Production and Distribution of Writing: CCSS.ELA-LITERACY.W.11-12.4 - CCSS.ELA-LITERACY.W.11-12.5 - CCSS.ELA-LITERACY.W.11-12.6

Research to Build and Present Knowledge: CCSS.ELA-LITERACY.W.11-12.7 - CCSS.ELA-LITERACY.W.11-12.8 - CCSS.ELA-LITERACY.W.11-12.9

SPEAKING & LISTENING

Comprehension and Collaboration: CCSS.ELA-LITERACY.SL.11-12.1 - CCSS.ELA-LITERACY.SL.11-12.1.A - CCSS.ELA-LITERACY.SL.11-12.1.B - CCSS.ELA-LITERACY.SL.11-12.1.C - CCSS.ELA-LITERACY.SL.11-12.1.D - CCSS.ELA-LITERACY.SL.11-12.2 - CCSS.ELA-LITERACY.SL.11-12.3

Presentation of Knowledge and Ideas: CCSS.ELA-LITERACY.SL.11-12.4 - CCSS.ELA-LITERACY.SL.11-12.5 - CCSS.ELA-LITERACY.SL.11-12.6

LANGUAGE

Conventions of Standard English: CCSS.ELA-LITERACY.L.11-12.1 - CCSS.ELA-LITERACY.L.11-12.1.B - CCSS.ELA-LITERACY.L.11-12.2 - CCSS.ELA-LITERACY.L.11-12.2.B

Knowledge of Language: CCSS.ELA-LITERACY.L.11-12.3

Vocabulary Acquisition and Use: CCSS.ELA-LITERACY.L.11-12.4 - CCSS.ELA-LITERACY.L.11-12.4.C - CCSS.ELA-LITERACY.L.11-12.5 - CCSS.ELA-LITERACY.L.11-12.6



VII. SCOPE and SEQUENCE

Introduced I
Developed D
Reinforced R

Grade 11

HTML	I	D	
Dreamweaver	I	D	
Microsoft Office	I	D	R
Computer Literacy	I	D	
Projects / Presentations	I		
Safety	I		
Career	I		