COURSE TITLE

Computer Applications

LENGTH

Half-Year
Grades 9-12

DEPARTMENT

Business Education
Barbara O'Donnell, Supervisor

SCHOOL

Rutherford High School

DATE

Spring 2017

Computer Applications

I. Introduction/Overview/Philosophy

This course is designed to continue building on the computer skills acquired at the middle school level. The goal is to familiarize and reinforce student understanding of computer applications including file management, word processing, spreadsheets, database, drawing, presentation, and integrated applications. Computer Applications equips the student with essential skills and knowledge necessary to use computer hardware and software in daily life and occupational tasks. Students will also apply effective oral and written communication techniques along with proper computer applications strategies.

II. Objectives

Course Outline:

A. Computer Basics
   1. Definition and examples of hardware
   2. Definition and examples of software
   3. Definition and examples of input devices
   4. Definition and examples of output devices

B. File Management
   1. Naming files/folders
   2. Organizing files/folders
   3. Using Save and Save As effectively
   4. Retrieving files/folders

C. Word Processing
   1. Entering text
   2. Selecting, deleting, replacing text
   3. Undoing, cutting, copying, and pasting
   4. Formatting letters and words
   5. Formatting sentences and paragraphs
      a. Aligning text
      b. Indenting
      c. Tabs
      d. Block indent
      e. Hanging indent
      f. Invisible characters
      g. Line spacing
      h. Bullets and numbering
      i. Symbols
   6. Formatting Pages and Documents
      a. Page breaks (hard and soft)
      b. Page numbering
      c. Headers and footers
      d. Section breaks
      e. Margins
      f. Columns
   7. Using Text Tools
      a. Spell check

b. Find and Change
c. Thesaurus

8. Importing Graphics
   a. Clipart, Libraries, Internet
   b. Formatting of graphics
9. Adding Tables and Pictures
   a. Adding images
      1) Aligning images
      2) Wrapping text
   b. Creating Tables
      1) Adding and deleting rows/columns
      2) Merging cells
      3) Using color
      4) Using borders
10. Outlining
   a. Setting up an outline
   b. Rearranging outline topics
11. Inserting and formatting breaks
   a. Page break
   b. Section break
   c. Column break

D. Creating Graphics
1. Drawing
2. Creating objects using shapes
   a. Changing fill and line attributes
   b. Resizing
   c. Reshaping
   d. Rotating
   e. Moving
   f. Aligning
   g. Grouping and ungrouping

E. Presentation Unit
1. Choosing presentation application
2. Learning various presentation tools
3. Practicing oral presentation skills
4. Creating notes/handouts to be used in oral presentation of final project

F. Spreadsheets
1. Working with cells, rows, and columns
   a. Entering data
   b. Editing data
   c. Moving data
   d. Filling cells
2. Using Formulas and Functions
   a. Entering formulas
      1) Math operations
      2) Entering cell references
      3) Relative vs. Absolute References
   b. Using functions
      1) Sum

2) Average
3) Minimum
4) Maximum
5) Count
6) IF

3. Formatting spreadsheets
   a. Formatting number
      1) Decimal places
      2) Negative numbers
      3) Separators
   b. Formatting text
      1) Style
      2) Size
      3) Color
      4) Alignment
   c. Sorting
   d. Inserting and resizing rows and columns
   e. Adding borders, gridlines, and headings
   f. Using titles, page breaks, and print ranges

4. Charting
   a. Identifying chart types
   b. Choosing appropriate chart types
   c. Making a chart
   d. Modifying a chart
      1) Charting types
      2) Changing color
      3) Updating the chart with new numbers
      4) Adding graphics to charts
      5) Adding titles, labels and legends

G. Database
1. Deciding when to use a database
2. Identifying parts of a database
3. Using browse, find, and layout modes
4. Entering data
   a. Adding a new record
   b. Deleting records
   c. Editing data
5. Sorting (ascending, descending and compound sorts)
6. Finding (Query)
   a. Using find mode
   b. Using simple and compound search queries
7. Designing a database
   a. Planning a database
   b. Defining fields
   c. Setting options for fields
   d. Laying out the database
   e. Adding summary fields (grand summary/sub-summary)
   f. Creating reports

H. Integration
   1. Integrating word processing, database, spreadsheets, presentation, and drawing into a well-designed project that is based on research, surveys, and prior knowledge.

I. Digital Citizenship
   1. Exploring aspects of final projects, personal, domestic and global digital citizenship challenges.
   2. Studying the impact of cyber crimes on society.
   3. Exploring the personal and societal impact of unethical use of digital tools.

Note: While direct instruction will be given in the area of computer applications, the use of the computer to complete mainstream assignments will be emphasized.

Student Outcomes

After completing this course, the student will demonstrate the ability to:

- Identify basic computer hardware and software.

- Demonstrate basic computer file management skills including naming, saving, retrieving, and organizing saved files.
- Demonstrate the use of word processing commands, text formatting procedures, as well as editing/proofing procedures.
- Format basic word processing documents properly using correct margins and text-wrapping techniques.
- Create advanced word-processed documents that demonstrate the use of basic desktop publishing techniques.
- Use database files to effectively retrieve information.
- Design, create, save, and retrieve a database file.
- Generate a report from the database file.
- Use spreadsheet functions, formula abbreviations, to more efficiently manipulate spreadsheet data.
- Design, create, save, and retrieve a spreadsheet file.
- Write spreadsheet formulas using basic arithmetic operations as well as algebraic operations
- Develop, enter, and modify spreadsheet data; graph data; print a hard copy of data and graphs.
- Integrate word processing, database, and spreadsheet applications.
- Determine appropriate software to use for specific applications.
- Use computer, network, the Internet, and Web 2.0 tools to conduct research and incorporate the research into a final project using word processing, database, spreadsheet, and presentation applications.
- Speak to an audience while effectively using presentation software and hardware.

New Jersey Student Learning Standards

CAREER READY PRACTICES

CRP1 Act as a responsible and contributing citizen and employee.
CRP2 Apply appropriate academic and technical skills.
CRP4 Communicate clearly and effectively and with reason.
CRP11 Use technology to enhance productivity.

8.1 Educational Technology All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

Strand A. Technology Operations and Concepts
Strand B. Creativity and Innovation
Strand C. Communication and Collaboration
Strand D. Digital Citizenship
Strand F. Critical Thinking, Problem Solving, and Decision-Making

21st Century Life and Careers

Standard 9.2: Career Awareness, Exploration, and Preparation

Strand C: Career Preparation

III. Proficiency Level

This course is open to grades 9-12. However, it is recommended that this course be taken in freshman year or that all students new to the district enroll.

IV. Methods of Assessment

Student attendance is extremely important since class work is assessed daily. Daily class work assessment will be based on individual completion of assignments, projects, and demonstration of skills. Test assessment will consist of objective and production-based assessment.

Students will be expected to seek help from classroom peers and instructor to complete daily classroom assignments. Online research, consultations with instructor, and lab use before or after school may be necessary.

The teacher will provide a variety of assessments. Among them are: quizzes/tests, group projects, oral presentations, simulations, computer projects, homework, and class participation.

The teacher will provide the subject area supervisor with suggestions for changes.

V. Grouping

There are no prerequisites for this course.

VI. Articulation/Scope & Sequence/Time Frame

This is a half-year course.

VII. Resources

Resources include but are not limited to speakers, computer technology/applications, videos, teacher created handouts, and workbooks.

VIII. Methodologies

The following methods of instruction are suggested: demonstration/lecture, individual and group projects, etc.

IX. Suggested Activities

Integrate computer technology/applications with other academic assignments and incorporate public speaking using the computer and other hardware as a visual device.

X. Interdisciplinary Connections

Connections are made to mathematics by using a variety of arithmetic formulas. Connections are also made to the disciplines of business and English by means of incorporating these into hands-on projects.

XI. Differentiating Instruction for Students with Special Needs: Students with Disabilities, English Language Learners, and Gifted & Talented Students

Differentiating instruction is a flexible process that includes the planning and design of instruction, how that instruction is delivered, and how student progress is measured. Teachers recognize that students can learn in multiple ways as they celebrate students' prior knowledge. By providing appropriately challenging learning, teachers can maximize success for all students.

Examples of Strategies and Practices that Support:

Students with Disabilities
- Use of visual and multi-sensory formats
- Use of assisted technology
- Use of prompts
- Modification of content and student products
- Testing accommodations
- Authentic assessments

Gifted & Talented Students
- Adjusting the pace of lessons
- Curriculum compacting
- Inquiry-based instruction
- Independent study
- Higher-order thinking skills
- Interest-based content
- Student-driven
- Real-world problems and scenarios

English Language Learners
- Pre-teaching of vocabulary and concepts
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Teacher modeling

- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding
    - •word walls
    - •sentence frames
    - •think-pair-share
    - •cooperative learning groups

XII. Professional Development

The teacher will continue to improve expertise through participation in a variety of professional development opportunities.

Curriculum Map

Class	September/February	October/March	November/April	December/May	January/June
Computer Applications	**Computer Basics** ▪ Definition and examples of hardware and software **File Management** ▪ Name files/folders ▪ Save and retrieve files/folders ▪ Organize files in folders **Spreadsheets** ▪ Work with cells, rows, and columns ▪ Enter, edit, and move data ▪ Print with and without formulas ▪ Use formulas and functions	**Spreadsheets (cont'd)** ▪ Format spreadsheets ▪ Sort data ▪ Chart data **Database** ▪ Identify parts of a database ▪ Use browse, find, and layout modes ▪ Enter data ▪ Search and sort a database ▪ Design and layout a database from scratch ▪ Format a database ▪ Define fields ▪ Create reports	**Database (cont'd)** ▪ Add a grand summary ▪ Perform calculations ▪ Add a sub summary **Word Processing** ▪ Enter and edit text in sentences and paragraphs ▪ Format pages and documents ▪ Format using MLA report style ▪ Creating tables	**Creating Graphics** ▪ Inserting and editing graphics ▪ Create graphics ▪ Resize, reshape, rotate, and group objects ▪ Change fill and line attributes ▪ Arrange around text **Digital Citizenship** ▪ Discuss global citizenship ▪ Discuss cyber crimes ▪ Discuss ethics in using technology	**Presentation** ▪ Create and modify slides ▪ Use clip art, animation, transitions and buttons to enhance the presentation ▪ Use outline and notes feature ▪ View and print the slideshow **Integration** ▪ Integrate word processing, database, spreadsheets, presentation, and drawing into a well thought out project that is based on research, surveys, and prior knowledge