

COMPUTER PROGRAMMING 1—1/2 Unit

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COURSE DESCRIPTION:

This course of study is designed to emphasize the fundamentals of computer programming. Topics include computer software, program design and development, and practical experience in programming, using modern, object-oriented languages.

REQUIRED MATERIALS:

- Textbooks: *Introduction to Java and Software Design*, by Nell Dale, Chip Weems, and Mark Headington, Jones and Bartlett, 2003. Textbooks will be supplied by the school and will remain in the class.
- A minimum of two floppy disks—3 ½-inch, high density—required by the end of the first week of the semester
- One 20 lb realm of paper
- Notebook for taking notes, pencils
- GTCHS Internet Policies sheet signed by parent or guardian is required for student to gain access to the Internet which is required for class use (please contact teacher if parent or guardian wishes to deny Internet privileges)
- Classroom lab policies and syllabus sheet acknowledgement sheet signed by student *and* signed by parent or guardian

COMPETENCIES/OBJECTIVES:

After successful completion of this course, the student should be able to

SAFETY

The student will be able to:

1. Explain how related student organizations are integral parts of career and technology courses.
2. Explain the goals and objectives of related student organizations.
3. List opportunities available to students through participation in related student organization conferences and other activities.

COMPUTER SYSTEMS

The student will be able to:

1. Define what a computer is and its purpose.
2. Identify basic hardware and software components.
3. Explain the flow of data and instructions through the computer system.
4. Define a computer program.
5. Define input and output.
6. Categorize various types of storage.

PROGRAM DOCUMENTATION

The student will be able to:

1. Describe the purpose and value of the program.
2. Define the input and source of input for the program.
3. Define the output and the destinations (report, database, etc).
4. Define variables and constants associated with the program (use descriptive names).
5. Describe the scope of the above variables.
6. Prepare specified report layout.

PROGRAMMING PROCEDURES

The student will be able to:

1. List in sequence the steps for developing a program.
2. Analyze the task and develop an algorithm (pseudocode).
3. Design a program using a flowchart.
4. Write the program code from a flowchart or algorithm.
5. Key the program and save it.
6. Debug the program and verify the output of the program.
7. Design test data for use in program testing.
8. Run the program to test the logical validity of an application program given appropriate data.

PROGRAMMING

The student will be able to:

1. Describe the functions.
2. Identify correctly written statements.
3. Describe the use of commands.
4. Differentiate between commands and statements.
5. Write a program that will produce a formatted report.
6. List and define arithmetic, relational, and logical operators.
7. Explain operator precedence.
8. Write a program that will perform calculations on given data.
9. Write an interactive program.
10. Write a program using one or more subroutines/functions.
11. Write a program that passes arguments to another subroutine/function.
12. Write a program using accumulators/summing and counters to total.
13. Write a program using the three decision structures: sequential, selection, and repetition.

OBJECT-ORIENTED PROGRAMMING

The student will be able to:

- Describe the concept of OOP (object-oriented programming).
- Describe Class.
- Describe Objects.
- Describe Pointers.
- Describe Attributes, and Behaviors.

GRADING SCALE:

A	90-100		
B	80-89	Below Proficiency	Less than 80

FINAL GRADE DETERMINATION:

By the end of the semester, the student must perform competencies at B level in order to successfully complete Computer Programming 1. The final grade will be determined using the following:

Theory and hands-on tests	60%
Final exam	20%
Daily assignments, pop quizzes, projects, etc.	20%

COURSE POLICIES AND PROCEDURES

Student Conduct in Class

Every student is expected to abide by the GTCHS code of conduct as written in the Student Handbook. The Code will be consistently followed. Any student behavior that is disruptive to the educational process and the learning atmosphere of all learners in the classroom will be handled in accordance with the GTCHS Student Handbook. In addition to the GTCHS code of conduct, students must also adhere to the school's Internet usage policies as well as to the classroom computer lab policies. Any acts of classroom disruption or violation of school conduct, Internet usage policies, or computer lab policies may result in disciplinary action.

Electronic Devices in Class

Cellular phones, pagers, CD players, radios, headphones, or any other electronic devices are prohibited in the classroom.

Test Policy

Major tests will be announced in class at least one week ahead of time. Make-up exams will be allowed for excused absences. Make-up exams will be given during Tuesday/Thursday study sessions or another time prearranged with your teacher.

Tardies and Absences

All students are expected to be in class on time. The GTCHS policy for tardiness and absences will be followed. If you are absent or late (whether excused or unexcused), it is *your responsibility* to get class notes, handouts, lab assignments, and any other information that was covered while you were gone. When you have an excused absence from class and an assignment was due the day you were absent, the work may be turned in at the beginning of the next scheduled class meeting. Keep your teacher informed when you are having a problem with attendance.

Academic Honesty

Students assume full responsibility for the integrity of all work turned in to the teacher. Each student is expected to uphold the school's standard of conduct relating to academic honesty. The guiding principle of academic integrity shall be that all daily assignments, projects, quizzes, unit tests, final exams, and any other work submitted be the product of the student's own efforts and not that of any other individual. You are guilty of violating the honor code if you

1. Use the work of others and represent it as your own (plagiarism)
2. Obtain unauthorized assistance for any academic work
3. Give unauthorized assistance to other students who will represent your work as theirs
4. Fail to appropriately document resources of material obtained in research
5. Get unauthorized assistance from other students, methods, or media when taking a test or other assessment

The penalty for violating the honor code is severe. If you are unclear about whether a particular action or situation may constitute an honor code violation, you should meet with your instructor to discuss the situation. Any student violating the honor code will receive disciplinary action following the GTCHS Student Handbook.

In this class you will at times be allowed to assist and seek assistance from classmates in general discussions of computing techniques. General interactions with your teacher and classmates are encouraged. You must develop your own solutions to the assigned projects, assignments, quizzes, and tests. You may not “work together” on graded assignments. Working together constitutes cheating. No student is allowed to copy by any means another’s work or portions of it and represent it as their own.

Student Success Factors

This Business Technology course is a valuable component of the training you’ll need for your future—whether you’re going to college or entering the work force. There are several tips that can help you achieve and earn success in this course.

- The most important tip is for you to keep your teacher informed of any problems you may be having in class or with the course material. GTCHS wants you to succeed. *Your teacher wants you to succeed!* If you need extra help with an assignment, let your teacher know right away. Extra help will be given to you outside of class during the Tuesday/Thursday afternoon help sessions as well as at other times that can be arranged with your teacher.
- Budget your time well while in class. Arrive on time, get out needed materials, place belongings on the shelf below your computer, don’t waste valuable learning time by working efficiently, don’t you’re your belongings until the teacher allows you to.
- Complete your assignments on time. You will be given an assignment sheet for the semester that lists the daily and weekly tasks and work. Due dates will be listed on the sheet for the semester including test dates. There will be penalties for work turned in late.
- When homework assignments are given, come to class prepared.
- Bring required materials with you to class daily (floppy disks, notebook, etc.)
- Always follow the GTCHS computer lab policies.
- Always follow the GTCHS Internet policies.
- Honor the GTCHS code of student conduct.
- Be willing to assist your classmates when authorized.
- Be courteous and respectful of all your classmates, your teacher, and others.
- Be enthusiastic and have fun learning!

Please sign and return this sheet to the teacher as soon as possible.

Name of Course: _____

Please check the boxes if you have read and understand the course syllabus and computer lab policies of GTCHS.

- I have read and understand the course syllabus.
- I have read and understand the GTCHS computer lab policies, Internet policies, and GTCHS code of conduct policies and will abide by them.

Printed Student Name

Student Signature

Printed Parent/Guardian Name

Parent/Guardian Signature