COURSE NUMBER: CIS 201-01  (CRN: 20407)

COURSE NAME: Assembly Language Programming

DIVISION: Business Computing & Applied Technology

INSTRUCTOR: Chester Karwowski  PHONE: (Day) 443-412-2367  EMAIL: ckarwows@harford.edu

CATALOG DESCRIPTION: This course covers the characteristics and functions of a microcomputer Assembly language. The student learns how to solve application problems using Assembly language. Laboratory consists of coding, keying and debugging programs. Prerequisite: CIS 102 or permission of the instructor. Corequisite: CIS 115. It is recommended that students have programming experience in at least one other programming language prior to taking this course. Course fee.

LECTURE/DISCUSSION HOURS: 60 hours (Split between Lecture/Discussion and Lab).


* Textbook is required. Visual Studio 2012 is highly recommended for labs and homework.

INSTRUCTIONAL METHODS:

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<th>Lecture/Demonstration</th>
<th>Lab Assignments</th>
<th>Programming Assignments</th>
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<tbody>
<tr>
<td>Textbook Reading</td>
<td>Review Questions/Homework</td>
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ASSESSMENT METHODS & GRADING STANDARDS:

A = 90 - 100  Quizzes/Homework/Class = 20%
B = 80 - 89   Programming Labs     = 30%
C = 70 - 79   Midterm Exam         = 20%
D = 60 - 69   Final Exam           = 30%
F = 59 and below

Lab Grades are determined as follows:
10% - Due Date (10% per week can be lost for late assignments)
20% - Program Design (Reasonable approach, Documentation, etc...)
20% - Coding Design (Was the code optimized or wasteful, Did you use procedures well?)
50% - Does the program produce the expected results? (How flexible is it? Is it buggy?)
COURSE POLICIES:
HCC students are bound by the academic policies outlined in the most current HCC Catalog. It is the student’s responsibility to review these policies prior to the start of each semester.

You can view the catalog on the web at: http://www.harford.edu/Catalog

GENERAL STATEMENTS:

A. Disability Support Services:
HCC is committed to serving students who have documented physical, learning, psychological, or other disabilities. Students who have a disability are responsible for contacting Disability Support Services at 443-412-2402 to discuss their needs and establish eligibility for services and reasonable accommodations. Because accommodations can take time to implement, if you have not already contacted DSS you should do so immediately. All information shared with Disability Support is kept in accordance with relevant state and federal laws.

B. Academic Dishonesty:
Students will be familiar with and adhere to the policy governing academic dishonesty and its sanctions as outlined in the Code for Student Rights, Responsibilities and Conduct, which can be found on OwlNet under the My Academic Life Tab or in the HCC online catalog. Any student caught using another student’s code for their purposes will receive a grade of 0% for the lab they are submitting. Do not share your code with others or this may result in both students receiving a 0% grade for the assignment.

C. Student Conduct:
Students will be familiar with and adhere to the “Code for Student Rights, Responsibilities and Conduct”, which can be found on OwlNet under the My Academic Life Tab or in the HCC online catalog. The Code outlines prohibited conduct, the disciplinary process, and possible sanctions. Students found responsible for violating the Code will have a disciplinary record that will remain in the Office of the Associate Vice President for Student Development for three years.

D. Syllabus Modification Statement:
The instructor reserves the right to modify and/or change the course syllabus with reasonable notification to students.

E. Federal Credit Hour Definition Statement:
For a 15 week semester, each credit hour represents one hour of classroom or direct faculty instruction and a minimum of two hours of outside class-work per week. For terms that are less than 15 weeks, students should also spend a minimum of two hours outside of class for every hour in class. Academic activities include, but are not limited to reading, writing, studying, research, and completing worksheets. In addition, at least an equivalent amount of out of class work is required for laboratory work, internships, practica, studio work, etc.

At Harford Community College, for all credit courses, students are expected to spend a minimum of 37.5 combined hours of direct instructional time and related coursework time per credit hour. This course is a 4 credit course. This course achieves the minimum of 150 hours of combined instructional time by requiring 60 hours of direct instructional time and 90 hours of student work outside of direct instructional time. The instructor reserves the right to modify and/or change the course syllabus with reasonable notification to students.

* The HCC Catalog may be accessed online at: http://www.harford.edu/Catalog
For about additional Student Services information: http://www.harford.edu/student-services.aspx
ATTENDANCE AND PARTICIPATION:
The College recognizes that successful student performance in college courses is dependent upon regular attendance and participation. Therefore, students are expected to attend all classes and to participate in all learning activities. Missed class time due to obligations such as religious practice, jury duty, military service, or participation in authorized College extracurricular activities will be considered excused absences. Students are responsible for contacting their instructors regarding all attendance matters. Documentation may be required for any excused absence.

Read make-up policy below for additional information regarding attendance and missed course work.

Violation of the Student Attendance Policy could result in loss of financial aid, removal from the course, and/or failure of the course.

Guidelines for Missing Classes for College Sanctioned Events:
1. The student is responsible for providing the faculty member with a schedule of college sanctioned events, including athletic games, which will result in missed classes.
2. It is the student’s responsibility to contact the faculty member to make up missed work.
3. For student athletes, games are excused. Practices are not.
4. Student athletes should meet with an advisor to help them create class schedules to limit missed instruction.

Students will be considered in violation of the HCC Attendance Policy if at any time, a student has consecutive unexcused absences from scheduled classes equal to 13% of the instructional term. A student that has two (2) unexcused absences in a 15-week course meeting once per week (as this course does) may be reported as having stopped attending. Students who have been dropped for never attending or stopped attending, who seek readmission into the class, must contact the Division Dean who will consult with the instructor. The student may be required to provide appropriate documentation.

For more information about Attendance, and Attendance reporting please refer to the Academic Catalog (http://www.harford.edu/Catalog).

MAKE-UP POLICY: Read Carefully!
Midterm and Final Exams: There will be no make-up exams except through arrangement with the instructor prior to the exam (and then only for reasons deemed valid enough to require the making up of a new exam, which may be more difficult.)

Quizzes and Class Assignments: Make-up quizzes will only be given before the class in which the quiz will be returned to the rest of the class. Contact the instructor to set a time for taking the missed quiz.

DUE DATES:
All assignments are to be handed in by the due date. Assignments will be accepted late with a 10% point deduction per week. To avoid the 10% penalty an assignment must be turned in via email or some other format before the beginning of the next class. It is the student’s responsibility to justify any absences and make up all assignments.

CLASS PREPARATION:
All of the reading assignments should be completed before the class in which the material is to be discussed. Additional handouts will be distributed regarding lab assignments at the appropriate time. It is very important to read the entire lab assignment before doing any assignment in lab. Approximately half of the class time will be devoted to lab work.
PLAGIARISM AND CHEATING:
The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Copying or using another’s work, including computer files, is both illegal and unethical. Each student is responsible for knowing the college’s policy as cited in the Student Handbook relating to ethical behavior regarding all intellectual property and in using the computer.

Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or part, by someone else. Students are guilty of plagiarism, intentional or not, if they copy materials from books, magazines, or other sources or if they paraphrase ideas from such sources without acknowledging them. Students guilty of, or assisting others in, either cheating or plagiarism on an assignment, quiz or examination may receive a grade of F for the course involved and may be suspended or dismissed from the program or College.

Plagiarism means representing the work of another as one’s own. It includes:
- Buying a paper from a research service or term paper mill
- Turning in another student’s work
- Copying a paper (or portion thereof) from a source text without proper acknowledgement
- Copying materials from a source text, supplying proper documentation, but leaving out quotation marks
- Paraphrasing materials from a source text without appropriate documentation
- Resubmitting work in whole or in part that has previously been submitted in another course without prior permission of the current instructor

INCLEMENT WEATHER:
If any classes have to be canceled, tests will be rescheduled for the next class period, and assignments will be collected during the next class period. Harford Community College has an inclement weather line that you may call to determine whether the college is closed. The HCC weather line number is 443-412-2322.

STUDENT EMAIL ACCOUNTS:
Students are required to activate and regularly check their student email accounts. Any unexpected changes to the class schedule or changes to assignments will be sent through HCC student email accounts, and then informed in the next regular class session. To ensure that you receive modifications and updates as quickly as possible be sure to check your student email accounts regularly. Student email accounts may also be used to relay useful information to help in the completion of assignments.

STUDENT RESPONSIBILITIES
- Students are responsible for completing all assignments by the scheduled due dates. Make sure that all of your submitted work is thoroughly tested to ensure that you receive maximum credit for your submissions.
- To pass this course, students must complete all lab assignments, and receive an overall passing grade for the labs, and graded materials throughout the class. If at the end of class any student is not complete, and the student has not petitioned to receive an incomplete (I) grade, the student will receive a grade for the course that is calculated with a 0% for all assignments that have not been completed. Some credit will be given for partially completed projects.
- Students are responsible for recognizing and accepting that when they put their name on any piece of work they are taking a vow that the work is theirs alone. Academic dishonesty of any form is unacceptable.
- Students are responsible for checking their HCC student email accounts regularly for class updates.
PROGRAM GOALS:
Computer Information Systems is a career-oriented program focusing on the use of computers in business. Students who successfully complete the Computer Information Systems degree will:

1. Analyze the use of commercial software applications, hardware, networks, programming, and other technologies in information systems at a level of competence appropriate to joining the workforce.
2. Use, maintain and modify existing information systems.
3. Design and implement new information systems.
4. Demonstrate the skills to work in a business environment including working in teams, project management, and professional and effective communication with a wider audience.

STUDENT LEARNING OBJECTIVES LINKED TO PROGRAM GOALS
1. Prepare programs using a procedural language. (Program Goal 3)
2. Practice problem solving skills and work independently to solve problems. (Program Goal 4)
3. Design, create, test and debug Assembly language programs. (Program Goal 3)
4. Solve a variety of problems using Assembly Language. (Program Goal 2)
5. Develop the flow of a program in a logical step-by-step manner. (Program Goal 3)
6. Develop programs that are both syntactically correct and logically correct. (Program Goal 3)
8. Develop user friendly interfaces that prompt the user and display output in a legible format with correct information. (Program Goal 3)
9. Describe the basic syntax and concepts of Assembly language. (Program Goal 1)
10. Describe the basic concepts of a computer microprocessor, and how to program at its level. (Program Goal 1)

COURSE CONTENT:

Basic Concepts
- Data Representation
- Boolean Operations

X86 Processor Architecture
- Processor Design
- Memory Management
- Input / Output

Assembly Language Fundamentals
- Linking and Debugging
- Defining Constants and Variables

Data Transfers, Addressing, and Arithmetic
- Data Transfer and Arithmetic instructions
- Operators, Directives, and Expressions
- JMP and LOOP instructions
- Indirect Addressing

Procedures
- Procedures
- Stack Operations
- Top-Down Structural Design

Conditional Processing
- Boolean and Comparison Instructions
- Conditional Jumps and Loops

Integer Arithmetic
- Shift and Rotate Instructions
- Multiplication and Division

Strings and Arrays
- Strings, and Arrays
- Sorting and Searching

Structures and Macros
- Structures, Macros
- Conditional Directives

Assembly Language Programming Techniques
- MS-Windows Programming
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1/28</td>
<td>Introduction / Course Objectives / What is Assembly Language?</td>
</tr>
<tr>
<td>2/4</td>
<td>Read: Basic Concepts of Assembly Language (Ch. 1)</td>
</tr>
<tr>
<td>2/11</td>
<td>*** Class Canceled ***</td>
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<tr>
<td>2/18</td>
<td>Read: x86 Processor Architecture (Ch. 2)</td>
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<tr>
<td>2/25</td>
<td>Read: Assembly Language Fundamentals (Ch. 3)</td>
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<tr>
<td></td>
<td>Lab Setup</td>
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<td></td>
<td>Quiz: Basic Concepts and x86 Processor Architecture (Ch. 1, and Ch. 2.2.2)</td>
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<td>Lab #1 Assigned</td>
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<tr>
<td>3/4</td>
<td>Read: Data Transfers, Addressing, and Arithmetic (Ch. 4)</td>
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<td>Lab #2 Assigned</td>
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<td>Quiz: Data Transfers, Addressing, and Arithmetic (Ch. 4)</td>
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<tr>
<td>3/11</td>
<td>Read: Procedures (Ch. 5)</td>
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<td>Lab #1 Due</td>
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<tr>
<td>3/18</td>
<td>Read: Conditional Processing (Ch. 6)</td>
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<td>3/25</td>
<td>*** Spring Break *** (No Class)</td>
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<tr>
<td>4/1</td>
<td>Read: Integer Arithmetic (Ch. 7)</td>
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<td>4/8</td>
<td>Midterm Exam</td>
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<td>4/15</td>
<td>Read: Strings and Arrays (Ch. 9)</td>
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<td>Read: Advanced Procedures (Ch 8 – Section 8.4)</td>
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<td>Lab #3 Assigned</td>
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<td>4/22</td>
<td>Read: Structures and Macros (Ch 10)</td>
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<td>Quiz: Strings and Arrays (Ch. 9)</td>
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<tr>
<td>4/29</td>
<td>Read: MS-Windows Programming (Ch. 11)</td>
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<td>Quiz: Structures and Macros (Ch. 10)</td>
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<tr>
<td>5/6</td>
<td>No new material – Return Work – Review Information for Final</td>
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<td></td>
<td>(Open Lab Time)</td>
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<tr>
<td>5/13</td>
<td>Final Exam</td>
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Lab/Reading Assignment and due dates may change as the semester goes forward.

*** 2/2 is the last day to drop a course with a full refund.
*** 4/13 is the last day to drop a course without academic penalty.