

# SYLLABUS

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**Code:** COMP135

**Title:** Computer Architecture using Assembly Language

**Institute:** STEM

**Department:** Computer Science

**Course Description:** Students will acquire the fundamentals of computer architecture from a programmer's perspective by learning assembly language, the interface between hardware and software. Designed for students with previous high-level programming language experience, this course enables the students to write code that provides a good, intuitive model of the computing environment. Concepts covered will be data representation, memory organization, the instruction cycle, addressing modes, exception handling and interrupts. Programs will be developed using the popular INTEL based architecture.

**Prerequisites:** COMP 171 or approval of Instructor/Department Chair

**Corequisites:** none

**Prerequisites or Corequisites:** none

**Credits:** 3

**Lecture Hours:** 3

**Lab/Studio Hours:** 0

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**REQUIRED TEXTBOOK/MATERIALS:**

**Text:** KIP R. IRVINE  
SIXTH EDITION  
PRENTICE HALL  
ISBN: 0-13-602212-X

[Optionally, you may use the fourth or fifth edition of the above text. See the instructor for appropriate mappings of readings and homework assignments to these editions.]

**Storage:** A portable secondary storage media (USB/flash drive)

**ADDITIONAL TIME REQUIREMENTS:**

The student should expect to spend at least 2 hours of time outside class for each hour in class. The Computer Science Main Lab is in room LAH 103 of Larrison Hall. Hours are posted on the outside door and on the [Computer Science Website](http://sites.brookdalecc.edu/home/stem-institute/computer-science/computer-science-lab/) ( <http://sites.brookdalecc.edu/home/stem-institute/computer-science/computer-science-lab/>).

**COURSE LEARNING OUTCOMES:**

Upon completion of this course, students will be able to:

- Use the Intel based 32 bit Architecture (IA-32) to manage memory
- Solve problems encountered in real situations using real mode and protected mode
- Incorporate basic Boolean logic in the programming schematic to solve the required assignments

**GRADING STANDARD:**

To be considered acceptable, a lab must be free of all syntax and logic errors and must meet all of the requirements outlined by the problem statement. Labs must also meet documentation and

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style requirements as outlined by the instructor. In addition, there will be 3 examinations. The final grade requirements for the course will be:

<b><u>GRADE</u></b>	<b><u>REQUIREMENTS</u></b>
<b>A</b>	Complete Lab Assignments 1-12 Earn an average test grade of 94 thru 100
<b>A-</b>	Complete Lab Assignments 1-12 Earn an average test grade of 90 thru 93
<b>B+</b>	Complete Lab Assignments 1-11 Earn an average test grade of 87 thru 89
<b>B</b>	Complete Lab Assignments 1-10 Earn an average test grade of 84 thru 86
<b>B-</b>	Complete Lab Assignments 1-10 Earn an average test grade of 80 thru 83
<b>C+</b>	Complete Lab Assignments 1-9 Earn an average test grade of 75 thru 79
<b>C</b>	Complete Lab Assignments 1-9 Earn an average test grade of 70 thru 74
<b>D</b>	Complete Lab Assignments 1-9 Earn an average test grade of 60 thru 69 A "C" grade is required to advance to the next course.
<b>F</b>	Earn an average test grade below 60 or fail to successfully complete labs 1-9.
<b>INC</b>	An incomplete (INC) may be assigned at the discretion of the course faculty for students who have extraordinary circumstances of documented hardship or emergency. These students have been actively participating throughout the term and have completed a significant portion of the course in a satisfactory manner but approach the end of the term without completing all assignments. The following process should be followed: The student contacts the faculty with the appropriate documentation. The incomplete contract is completed by the faculty and must be signed by both faculty and student. Students will be notified by email to check their grades and to speak to their counselor about the impact of an incomplete. All course work should be completed by the twenty-first day after the end of the current semester or term, exclusive of official college closings. When a student completes the work satisfactorily, faculty will submit a change of grade. If work is not completed satisfactorily, the INC will be changed to an F by the registrar. Students will be notified by email. For the purpose of calculating academic standing, the INC will be treated as an F. (College Grading System Regulation 5.0013R)

**UNITS( or chapters):** Each unit is comprised of objectives; specifically:

**Unit Objective:** Tells you what you will be able to do after successfully completing the unit.

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**Method of Evaluation:** Tells you the tools you should use for self-evaluation as well as those which will enable your instructor to evaluate your progress.

**Estimated Time to Achieve:** Gives you the approximate length of class time that you should allocate for completion of the unit.

**Learning Objectives:** Give you the details of each unit objective.

**Recommended Learning Experiences:** Tell you by what means you can complete the unit objective. These include – Class Meetings; your primary source of learning – Text Assignments; read material carefully – Programming Assignments(labs); your implementation of material learned.

## **COURSE CONTENT:**

The 9 units comprising the course are:

<b><u>UNIT</u></b>	<b><u>TITLE</u></b>
1	Basic Machine Concepts/Data Representation
2	Processor Architecture
3	Basic Elements of Assembly Language
4	Addressing, Arithmetic and Data Transfer
5	External Procedures
6	Conditional Processing and Loop
7	Integer Arithmetic
8	Strings and Arrays
9	32 Bit Windows Programming

## **DEPARTMENT POLICIES:**

**Testing:** Students will be allowed to take each test only **one** time. There are **no retests**. If a student has a valid and documented excused absence on the day of the test, the student must make arrangements with the instructor to make up the test. The exam must be taken within 10 days and will be graded for full credit. Saturdays and Sundays count as days when calculating the 10 day limit. If not taken within the 10 days, a grade of zero will be assigned to the test. Only one in class test may be missed. Any other missed test will be assigned a grade of zero.

**Resubmitted assignments:** In the case that an assignment needs to be corrected, the assignment must be corrected and resubmitted for grading no later than 1 week from the original due date.

**Late assignments:** Labs are to be submitted on a timely basis. The instructor will assign due dates. No more than 25 percent of the total labs may be submitted during the last two weeks of the semester.

**Attendance:** Attendance is required every week. More than three absences will result in a failing grade.

**Addendums:** Individual Instructors may add additional requirements to this syllabus in written form (such as assignment due dates, cover sheets, class behavior, etc.).

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**ACADEMIC VIOLATION:** The instructor of the course has the authority to give a course grade of F if the student submits the work of another person in a manner that represents the work as one's own, or knowingly permits one's work to be submitted by another person without the instructor's authorization. All computer work must be on your own portable storage device.

## **College Policies:**

As an academic institution, Brookdale facilitates the free exchange of ideas, upholds the virtues of civil discourse, and honors diverse perspectives informed by credible sources. Our College values all students and strives for inclusion and safety regardless of a student's disability, age, sex, gender identity, sexual orientation, race, ethnicity, country of origin, immigration status, religious affiliation, political orientation, socioeconomic standing, and veteran status. For additional information, support services, and engagement opportunities, please visit [www.brookdalecc.edu/support](http://www.brookdalecc.edu/support).

For information regarding:

- ◆ Brookdale's Academic Integrity Code
- ◆ Student Conduct Code
- ◆ Student Grade Appeal Process

Please refer to the [BCC STUDENT HANDBOOK AND BCC CATALOG](#).

## **NOTIFICATION FOR STUDENTS WITH DISABILITIES:**

Brookdale Community College offers reasonable accommodations and/or services to persons with disabilities. Students with disabilities who wish to self-identify must contact the Disabilities Services Office at 732-224-2730 (voice) or 732-842-4211 (TTY) to provide appropriate documentation of the disability, and request specific accommodations or services. If a student qualifies, reasonable accommodations and/or services, which are appropriate for the college level and are recommended in the documentation, can be approved.

## **ADDITIONAL SUPPORT/LABS:**

See the Tutoring Center for information <https://www.brookdalecc.edu/academic-tutoring/tutoring-center/>.

## **MENTAL HEALTH:**

- Mental Health Crisis Support: From a campus phone, dial 5555 or 732-224-2329 from an external line; off-hours calls will be forwarded to BCC police (2222 from a campus phone)
- Psychological Counseling Services: 732-224-2986 (to schedule an appointment during regular hours)

See Instructor addendum for specific information about specific class schedule and assignments, instructor information (hours, office, phone, and email), grading policy, etc.

*The syllabus is intended to give student guidance in what may be covered during the semester and will be followed as closely as possible. However, the faculty member reserves the right to modify, supplement, and make changes as the need arises.*