

University of Detroit Mercy
College of Engineering and Science
Department of Mathematics and Computer Science

CSC-271 Assembly Language
Fall 2002-2003

Instructor: Dr. Kevin Daimi

Times: 11:20 – 12:35 P.M. TR, E230

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Office Hours: Tuesday 4:00 – 5:00 P.M.,
Wednesday 10:00 – 11:00 A.M.,
& By Appointment

Description of Course:

This course will present the basic features of PC hardware, requirements for coding in Assembly Language, Addressing Techniques, and processing different data types including Binary, BCD, ASCII, and String data. The course will also introduce the design and implementation of Macros and Subprograms.

Course Prerequisite:

This is a Machine Level Programming course. Students who have completed CSC 171/172 Introduction to Computer Science I and II are adequately prepared for the course. Any equivalent programming courses/experience will also prepare students for this class.

Required Text:

Peter Abel: IBM PC Assembly Language and Programming, Prentice Hall, 2001.

There will also be supplementary lecture notes and handouts.

Optional Text:

Kip Irvine: Assembly Language for Intel-Based Computers, Prentice Hall, 1998.

William Jones: Assembly Language for the IBM PC Family, Scott/Jones, 1997.

General Objectives:

1. To provide understanding of the basic features of PC hardware.
2. To introduce the basic concepts of Assembly Language.
3. To prepare students for debugging high-level language programs at the level of the assembly language they generate.

Specific Objectives:

Upon completion of the course, students will

1. Understand the functions of the CPU registers.
2. Be able to design algorithms and implement them in Assembly Language.
3. Be able to debug Assembly Language programs.
4. Be able to link programs written in different programming languages.
5. Design and implement Macros.
6. Write Computer Interfacing programs.

Instruction Methods and Techniques:

1. There will be lectures of 75 minutes twice a week.
2. Algorithm Design and Example Programs will be demonstrated in class using overhead projector. Handouts will be provided whenever necessary.
3. Students will have 3 individual lab assignments to be done outside class.
4. Students will be asked optionally to submit a 5-page extra-credit report on either applications of Assembly Language, or comparing different Assembly Languages.
5. Students will be involved in the classroom by questioning to stimulate thought, interest and reinforce previous points.
6. Whenever possible students will discuss each other's programs and suggest ways for improving these programs.

Assignments for the Course:

Assignment	Topic Covered	Assign Date	Collect Date
Project 1	Logic and Control	10/10/02	10/24/02
Project 2	String Processing	10/31/02	11/14/02
Project 3	Table Processing	11/19/02	12/5/02

Programs will be graded for scope, correctness, style, documentation, and timeliness. A program that “works” will not receive full credit unless it is well written, properly documented, and efficient in terms of memory space used and execution speed.

Late projects will not receive full credit. Unless otherwise specified, projects turned in late may lose as much as 20% and projects may not be accepted at all after that week.

Attendance/Participation:

Students are expected to attend class on a regular basis and participate in the discussions. They are responsible for all the material presented therein. Formal attendance records will not be maintained; however, attendance is highly correlated with performance on the projects and the exams.

The instructor will attempt to make reasonable accommodations for students who miss a class due to illness, death in the family, or other legitimate reasons. However, students who are forced to miss several classes will have difficulty completing the course in a satisfactory manner.

Academic Integrity:

Students are expected to conform to a high standard of honesty and integrity in this course. Copying the work of someone else and other forms of cheating are strictly prohibited. Permitting or tolerating such behavior is also prohibited. The minimum penalty for any offense is a 0 on that assignment. The culprits may be subject to additional sanctions, up to and including expulsion from school for serious offenses, as prescribed by the University Catalog and the Engineering and Science Student Handbook.

Make Up Policy:

Make Up exams will only be given to students who miss an exam for legitimate reason (as defined above under “Attendance”) and who notify the instructor in advance.

Important Dates:

Exam	Date	Time	Chapters
Exam 1	10/17/02	11:45-12:35 p.m.	1, 2, 4, 5, 6,7 and notes
Exam 2	11/21/02	11:45-12:35 p.m.	11, 12, 13, 14, and notes
Final Exam	12/10/02	11:00–12:50 p.m.	7, 11, 12, 13, 14, 21, 22, and notes

Other Important Dates:

9/06/2002	Last Day to Declare Audit or Pass/Fail Option
9/10/2002	Last Day to Add a Class
9/10/2002	Last Day for 100% Refund
9/11-17/2002	75% Refund Period
9/18-24/2002	50% Refund Period
9/25-10/01/2002	25% Refund Period
9/27/2002	Last Day to Drop a Course Without a "W"
10/28/2002	Advising for Winter & Summer 2002-2003 Begins
11/04/2002	Registration for Winter & Summer 2002-2003 Begins
11/22/2002	Last Day to Withdraw from Class

Grading:

Project/Exam	Percentage
Project 1	10%
Project 2	10%
Project 3	10%
Exam 1	15%
Exam 2	15%
Final Exam	40%

Grading Scale:

Grade	Quality Point
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0

Course Outline

- Basic Features of PC Hardware
- Requirements for Coding in Assembly Language
- Assembling, Linking and Executing a Program
- Symbolic Instructions and Addressing
- Writing .COM Programs
- Programming Requirements for Logic and Control
- Introduction to Screen and Keyboard Processing
- Processing String Data
- Processing Binary Data
- Processing ASCII and BCD Data
- Processing Tables
- Macros and Subprograms