Tentative Course Syllabus
(the most updated version of this syllabus is maintained here on the eCollege course shell)

TEXAS A&M UNIVERSITY – COMMERCE
CSCI 516 FUNDAMENTAL CONCEPTS OF COMPUTING / MACHINE ORGANIZATION (ASSEMBLY LANGUAGE PROGRAMMING)

CSCI 516 01E 22531
Spring 2015 (1/20/2015 through 5/8/2015)

CLASS MEETINGS: **Time: Tues & Thurs 2PM-3:15PM** **Location:** Jour234 **Teaching Assistant:** TBA **TA office hours:** TBA	Instructor Office Hours (Jour209): Tues & Thurs: 10 - 11AM; 12:15 - 2PM and 3:15 - 4:30PM, or by appointment via email. Include "CSCI 516" in the subject line of your course-related e-mail. E-mail from the email account provided by the TAMUC. (For your visits during the office hours, please still go ahead and drop me an email in advance in order to notify me that you will stop by, since I might have occasionally mandatory meetings to attend which might occasionally overlap with my office hours.) Please email the TA if you would like to visit during his office hours. Please cc me as well.

INSTRUCTOR:
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TEXTBOOK:
Assembly Language for Intel-Based Computers, 6th Edition by Kip R. Irvine, Prentice Hall.
ISBN-13: 978-0-13-602212-1

COURSE DESCRIPTION:
Concepts of assembly language programming and machine organization of a modern digital computer are presented. Students will have the opportunity to study machine addressing, stack operations, subroutines, programmed and interrupt driven I/ O, machine organization and computer architecture at the register level. Students will utilize the 80x86 instruction set and will perform programming exercises. **Credit hours: 3. Pre/Co-requisite: CSCI 515.**

STUDENT LEARNING OUTCOMES:
Students will be able to
(SLO #1) identify numbering systems and do conversions **(**from one number system to another);
(SLO #2) identify basic computer organization, general concepts of IA-32 and its processor architecture (identify theoretical concepts to design digital diagrams, basic circuits and gates; the link between Boolean functions, circuits, processor, micro code, machine code),
(SLO #3) identify concepts of machine instructions, interrupts, Assembly language and linking (do Assembly Language programming, work with the basic elements of Assembly Language; constants, words, identities, directives, instructions; assemble, link and run a program; identify I/O devices and memory mapped I/O;

identify keyboard input, read, display and copy, common Interrupts, MS-DOS services; read and display 64 bit integers; perform Direct Addressing),
(SLO #4) identify unconditional jumps, flags, subroutines, stacks (identify arithmetic, flags, registers; work with jump and loops; search an area for positive numbers; do nested procedure calls; implement stack operations, work with shift and rotate instructions, do 64 bit addition),
(SLO #5) identify arrays, addressing modes, memory management, indirect addressing, conditional loops and floating point,
(SLO #6) identify advanced procedures, local variables, stack parameters and frames, strings, and link to high level language.

COURSE OUTLINE/CONTENT*

Week 1: 01/20, 01/22	Chapter 1. Basic Concepts
Week 2: 01/27, 01/29	Chapter 2. x86 Processor Architecture
Week 3: 02/03, 02/05	Chapter 3. Assembly Language Fundamentals
Week 4: 02/10, 02/12	Chapter 3. (continued) Chapter 4. Data Transfers, Addressing and Arithmetic
Week 5: 02/17, 02/19	Chapter 4. Data Transfers, Addressing and Arithmetic (continued)
Week 6: 02/24, 02/26	Chapter 5. Procedures
Week 7: 03/03, 03/05	Chapter 6. Conditional Processing
Week 8: 03/10 **03/12, Thursday**	Chapter 6. Conditional Processing (continued) **Midterm Exam (Covers chapters 1-6)**
Week of 03/16-03/20	Spring Break.
Week 9: 03/24, 03/26	Chapter 7. Integer Arithmetic
Week 10: 03/31, 04/02	Chapter 7. Integer Arithmetic (continued) Chapter 8. Advanced Procedures
Week 11: 04/07, 04/09	Chapter 8. Advanced Procedures (continued)
Week 12: 04/14, 04/16	Chapter 9. Strings and Arrays
Week 13: 04/21, 04/23	Chapter 10. Structures and Macros
Week 14: 04/28, 04/30	Chapter 12 Floating-point Processing and Instruction Encoding (if time permits, partial chapter only) Chapter 13 High-Level Language Interface (if time permits, partial chapter only)
Week 15: 05/05, 05/07	Last week of classes. The last week will be used for covering the course materials for missing days, covering any unfinished course materials from the days before, possible new course material if necessary, and Q&A/review session if time permits; and possible participation in other course students' project presentations.
Finals week: 5/12 Tuesday	**Final Exam at 1:15pm-3:15pm, in class, comprehensive of all material covered. As per the final exam schedule at:** **http://www.tamuc.edu/admissions/registrar/academicCalendars/final-exam-schedule.aspx**

**Tentative. All dates and content may be subject to change throughout the semester; changes will be communicated to the students in class or via eCollege course shell announcements or via email.*

EXAMS & GRADING*:

Attendance & In-Class Quizzes	20%
Homework Assignments	30%
Midterm Exam	20%
Final Exam (Comprehensive of all the material covered)	30%

**Tentative.*

COURSE REQUIREMENTS:

eCollege course shell: The course will be supplemented with activities via TAMUC's eCollege course shell: https://secure.ecollege.com/tamuc. Assignments will be uploaded to eCollege course shell. Students are responsible for obtaining and setting up their eCollege account using their TAMUC student login and need to follow the eCollege course shell daily for the course announcements, downloading and uploading the assignments, and other course activities.

If at any time you experience technical problems (e.g., you can't log in to the course, you can't see certain material, etc.) please contact the eCollege HelpDesk, available 24 hours a day, seven days a week, and notify me as well. The HelpDesk can be reached by sending an email to helpdesk@online.tamuc.org or by calling 1-866-656-5511.

Study: To plan a minimum of three hours of outside preparation for each hour of class is a safe time allocation for successfully completing the course.

Assignments: There will be regularly assigned homework problems. These assignments may require the application of various software packages. Assignments will be given and returned via the online eCollege system as a convenience to the students and the instructor. It is the student's responsibility to login and check the course eCollege site daily for announcements, assignments and course-related content. ***It is very important that students follow the instructions carefully on the assignments.*** It is the student's responsibility to have all assignments ready on time by the given due date. Late assignment may *not* be accepted or may be *penalized* and assignment may not be accepted beyond a certain time. Important material from the text and outside sources will be covered in class. Students should plan to take careful notes as not all material can be found in the texts or readings. Discussion is encouraged as student-procured outside material relevant to topics being covered. End of chapter activities and online activities may be assigned to reinforce material in the text.

Exams: Two exams will be given, one midterm exam and one final exam. The exams will be closed book/notes and will test assigned readings and material discussed in class. The instructor may add other necessary exams if he sees necessary.

Attendance: Student participation will be graded by the level of class participation and attendance. Students are expected to attend every class. The student may fail the course if the attendance is below certain percentage.

Quizzes: *Unannounced* pop-quizzes will be given to help ensure students stay up with assigned material.

Programming assignments: Programming is a part of this class. Some of the homeworks, quizzes and exams will include programming assigments. Programs will receive a letter grade based on whether he program compiles, executes, and produces the required correct results without any errors. Programs with copied code or other cheating (all or in part) receive grade 0. A program with extra features, fancy output may receive extra score. A program with sloppy coding or editing, no comments, spacing, etc may have points deducted.
The professor reserves the rights to reward students for continuous hard work.

Students can see their graded assignment, quiz and exam papers during the office hours. The students have one week to see their graded papers after the grades are announced (grades either announced via email or uploaded to eCollege course shell). After that time period, it is at the discretion of the instructor. The overall course grades are finalized after all the exams, assignments, quizzes and attendances are weighed and evaluated at the end of the semester in the instructor's spreadsheet.

ACADEMIC ETHICS:

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedures, Conduct). Ethics include the issue of plagiarism, and copying parts or whole of assignments, quizzes and exams is just as serious as any other type of plagiarism. If you are caught sharing or using other people's work, you will receive a 0 grade and a warning on the first instance. A subsequent instance will result in receiving an F grade for the course, and possible disciplinary proceedings. The student who shares as well as the one who copies will both receive a 0.

ATTENDANCE POLICY :
Student participation will be graded by the level of class participation and attendance. Students are expected to attend every class. The student may fail the course if the attendance is below a certain percentage. If a student is absent from class on the due date of any assignment, they are expected to make alternative arrangements to assure that the assignment is turned in ON TIME. Any student wishing to withdraw from the course must do so officially as outlined in the class schedule. THE INSTRUCTOR CANNOT DROP OR WITHDRAW ANY STUDENT.

COURSE REQUIREMENT DEADLINES:
Credit will be given for ONLY those exam(s), program(s), and/or project(s) turned in no later than the deadline(s) as announced by the instructor of this class unless prior arrangement has been made with the instructor. Late assignments will be penalized, and the instructor may not accept late assignments after a specified period.

METHOD OF EVALUATION (Tentative):

Final average	Letter grade
90 – 100	A
80 – 89.99	B
70 – 79.99	C
60 – 69.99	D
Below 60	F

STUDENTS WITH DISABILITIES REQUIRING ASSISTANCE:
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:
Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu

SMOKE, VAPOR & TOBACCO FREE ENVIRONMENT:
University Procedure 34.05.99.R1 now prohibits the use of vapor/electronic cigarettes, smokeless tobacco, snuff and chewing tobacco inside and adjacent to any building owned, leased, or operated by A&M – Commerce.

UNIVERSITY RULES AND PROCEDURES can be accessed at
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/

The instructor maintains the right to modify the course syllabus & policies within the semester if need arises.