Tentative Course Syllabus

(the most updated version of this syllabus is maintained on eCollege course shell)

TEXAS A&M UNIVERSITY – COMMERCE

CSCI 516 FUNDAMENTAL CONCEPTS OF COMPUTING / MACHINE ORGANIZATION
(ASSEMBLY LANGUAGE PROGRAMMING)
CSCI 516 02W 83552

Fall 2014 (8/25/2014 through 12/12/2014)

CLASS MEETINGS:	Instructor Virtual Office Hours (eCollege): Tues & Thurs: 11:15PM-2PM, 3:15-4:30PM by appointment via email. Include "**CSCI 516 02W**" in the subject line of your course-related email. Since this is an online/web class, the 1st preferred way of interaction for me with you is via your posting of your questions to Virtual Office link on eCollege course shell; the 2nd preferred way is via e-mail; and the 3rd preferred way is via phone call to my office phone during the office hours. If you plan to call or visit during the office hours, please drop me an email in advance in order to notify me that you will call or stop by, since I might be helping students from face-to-face class sessions, and I might have occasionally mandatory meetings to attend which might occasionally overlap with my office hours.
Time: Online **Location: TAMUC eCollege course shell** **TA: TBA** **TA Office Hours: TBA**	

INSTRUCTOR:

Ünal "Zak" Sakoglu, Ph.D.
Assistant Professor, Department of Computer Science
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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:

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Week 1: 8/25 thru 8/29   Chapter 1. Basic Concepts
Week 2: 9/1 thru 9/5   Chapter 2. x86 Processor Architecture
Week 3: 9/8 thru 9/12   Chapter 3. Assembly Language Fundamentals (beginning)
Week 4: 9/15 thru 9/19   Chapter 3. Assembly Language Fundamentals (continued)
                                 Chapter 4. Data Transfers, Addressing and Arithmetic (beginning)
Week 5: 9/22 thru 9/26   Chapter 4. Data Transfers, Addressing and Arithmetic (continued)
Week 6: 9/29 thru 10/3   Chapter 5. Procedures (beginning)
Week 7: 10/6 thru 10/10   Chapter 6. Conditional Processing (beginning)
Week 8: 10/14   Chapter 6. Conditional Processing (continued)
          10/16 Thursday   Midterm Exam, online (Covers chapters 1-6)

Week 9: 10/20 thru 10/24   Chapter 7. Integer Arithmetic (beginning)
Week 10: 10/28 thru 10/30   Chapter 7. Integer Arithmetic (continued)
                                 Chapter 8. Advanced Procedures (beginning)
Week 11: 11/3 thru 11/7   Chapter 8. Advanced Procedures (continued)
Week 12: 11/10 thru 11/14   Chapter 9. Strings and Arrays
Week 13: 11/17 thru 11/2   Chapter 10. Structures and Macros
Week 14: 11/24 thru 11/26   Chapter 12 Floating-point Processing and Instruction Encoding (partial chapter only)
                                 Chapter 13 High-Level Language Interface (partial chapter only)

Week 15: 12/ thru 12/5   Last week of classes. The last week will be used for covering the course materials for missing days if any, covering any unfinished course materials from the days before if any, possible new course material if the instructor deems necessary, and Q&A/review tests if time permits.

Finals week: 12/9 Tuesday   Final Exam will be delivered online, comprehensive of all material covered.

EXAMS & GRADING:

Online Attendance, E-Activity, Online "Pop"Quizzes	20%
Homework Assignments	30%
Midterm Exam	20%
Final Exam (Comprehensive of all the material covered)	30%

COURSE REQUIREMENTS:

eCollege course shell: The is online and it will be delivered via TAMUC's eCollege course shell: https://secure.ecollege.com/tamuc. Announcements, course material, slides, assignments, tests 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 at least twice daily for the course announcements, downloading and uploading the assignments, checking any online pop-quizzes 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 via email 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 eight hours a week to study for this course is a safe time allocation for successfully completing the course.

Course Slides: The instructor will post course slides to eCollege course shell weekly, and it is mandatory for the students to study the course slides. The eCollege system tracks student's course shell activity, including the time spent on the course slides.

Assignments: There will be regularly assigned homework problems. Some of these assignments may require the application of various software packages. Assignments will be given and returned via the online eCollege system. It is the student's responsibility to login and check the course eCollege site at least twice 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 may be covered in class. Discussion is required if instructor posts a discussion item in the weekly activity. End of chapter activities and other online activities may be assigned to reinforce material in the text.

Exams: Two exams will be given, one midterm exam and one final exam, online. The instructor may add other necessary exams if he sees necessary.

Attendance: Student participation will be graded by the level of online class participation in discussions, course slides, and online tests (quizzes and exams and any other tests). Students are expected to participate in all the online activities. The student may fail the course if the online participation is below certain percentage.

Quizzes: *Unannounced* online pop-quizzes may 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 may request to 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 on the eCollege course shell. 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.

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

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 online class participation and attendance. Students are expected to follow every class and every online activity assigned by the instructor. The student may fail the course if the attendance is below a certain percentage. If a student is absent from class activities on the due date of any assignment, they are expected to notify the instructor and 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   (Final average will be rounded to the two decimal digits.)
90.00+   A
80.00 – 89.99   B
70.00 – 79.99   C
60.00 – 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

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

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