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 03E 82176
Fall 2015 (8/31/2015 through 12/18/2015)

CLASS MEETINGS: **Time: Thurs 4:30PM-7:10PM** **Location:** Jour129 **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 03E" 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.) Email the TA if you would like to visit during his/her office hours and please cc me as well when you email the TA.

INSTRUCTOR: Ünal "Zak" Sakoglu, Ph.D. Assistant Professor, Department of Computer Science Coordinator, Computational Science Program Texas A&M University - Commerce Instructor Office: JOUR209	e-mail: **unal.sakoglu@tamuc.edu** Office Phone: 903-886-5242 URL: http://people.tamu.edu/~sakogluunal

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.**
You have to obtain at least a B grade in order to pass this course since this is a prerequisite course for the MS CSCI program.

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*

Date(s)	Contents
Week 1: 09/01, 09/03	Chapter 1. Basic Concepts
Week 2: 09/08, 09/10	Chapter 2. x86 Processor Architecture
Week 3: 09/15, 09/17	Chapter 3. Assembly Language Fundamentals
Week 4: 09/22, 09/24	Chapter 3. (continued), Chapter 4. Data Transfers, Addressing and Arithmetic
Week 5: 09/29, 10/01	Chapter 4. (continued)
Week 6: 10/06, 10/08	Chapter 5. Procedures
Week 7: 10/13, 10/05	Chapter 6. Conditional Processing
Week 8: 10/20	Chapter 6. Conditional Processing (continued)
10/22, Thursday	**Midterm Exam, in class (Covers chapters 1-6)**
Week 9: 10/27, 10/29	Chapter 7. Integer Arithmetic
Week 10: 11/03, 11/05	Chapter 8. Advanced Procedures
Week 11: 11/10, 11/12	Chapter 9. Strings and Arrays
Week 12: 11/17, 11/19	Chapter 10. Structures and Macros
Week 13: 11/24, **11/26, Thursday**	Chapter 12 Floating-point Processing and Instruction Encoding (partial chapter only)
Week 14: 12/01, 12/03	Chapter 12 (continued, partial chapter only) Chapter 13 High-Level Language Interface (partial chapter only)
Week 15: 12/08, 12/10	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: 12/15, Tuesday	**Final Exam, 4:30pm-6:30pm, Rm. Jour129, comprehensive of all material covered.**

*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:

"Web-enhanced" course via eCollege: The course is supplemented with with an eCollege course shell for convenience to the students: Login via https://secure.ecollege.com/tamuc or http:// online.tamuc.org Assignments will be uploaded to eCollege course shell. Students are responsible for obtaining and setting up their eCollege account using their TAMUC student login. **Students 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. The HelpDesk can be reached by sending an email to helpdesk@online.tamuc.org or by calling 1-866-656-5511

Study: You should allocate a minimum of three hours of outside preparation for each hour of class for successfully completing the course; that is, 7.5 hours per week.

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. 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. Cellphones and other telecommunication electronics will not be allowed during the exams.

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

Quizzes: *Unannounced* pop-quizzes will be given to help ensure students stay up with assigned material. These quizzes may cover any course material that has been so far covered, with an emphasis on recent material that is covered.

Programming assignments: Programming is a part of this class. Some of the homeworks, quizzes and exams will include programming assignments. 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 their hard work.

*Students can see their graded assignment, quiz, exam papers, project reports and ask their questions during the office hours. The students have maximum **one week** to see their graded papers after the grades are announced (announced in class or uploaded to eCollege); beyond that, at the instructor's*

discretion. The overall course grades are finalized after all the exams, assignments, quizzes and attendances are weighed & evaluated at the end of the semester on the instructor's excel spreadsheet.

ACADEMIC ETHICS, POLICY AGAINST CHEATING:
"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 his/her work, as well as the one who copies, will **both** receive a 0. Copying/pasting from each other, from any solutions manuals, instructor's solutions, or any other person's solutions (e.g. previous students etc.) are ALL also considered cheating.

ATTENDANCE POLICY:
Student participation will be graded by the level of class participation and attendance. Students are expected to attend every class, on time. The student may automatically fail the course if the attendance is below a certain percentage, as per the university policies. If a student is absent from class on the due date of any assignment, they are expected to make alternative arrangements in advance to assure that the assignment is turned in on time. If you are late, your attendance that day may be penalized. 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.
   If you will be absent from class for any reason, it helps if you email me about your absence in advance. You can **only** be excused of absence if *i)* your absence is due to a university-approved event (e.g. sickness,…) **and** *ii)* if you can provide supporting document as an evidence (e.g. doctor's report,…) within a reasonable amount of time.

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/

This syllabus is tentative. The instructor maintains the right to modify the course syllabus & policies within the semester if need arises. Applicable changes will be communicated to the students in class or via eCollege course shell announcements or via email or in class.