Instructor:	Dr. Nikolay Metodiev Sirakov	**Office:**	Binnion 322
Office Hours:	TR 11 AM- 1PM	**E-mail:**	Nikolay_Sirakov@tamu-commerce.edu
	M 3 PM- 4:30 PM	**Office Phone:**	903 886 5943
	Additional by appointment		

NOTE: Before enrolling in this course, you are expected to have completed a course in computing and a programming language course with at least C. Also, the teacher assumes you have a good programming skills If you do not have this background, please drop this course **Now.**
All students are required to have an email account. If you do not have one, check in the Computer Science office and have one assigned. The preferred method of communicating with the instructor is through email.

COURSE DESCRIPTION-**PLEASE PAY ATTENTION that a NEW EDITION is in use**
Text: Assembly Language for Intel-Based Computers, 5th Edition, Kip R. Irvin, Prentice Hall

Pre-requisite: CSCI 515

Course Content: Boolean Operations and Functions; Basic Circuits; Digital Numbers Generation and Addition; IA-32 Processor Architecture; Assembly Language Fundamentals; Data Transfer and Addressing; Arithmetic; Array processing, Passing parameters through the stack; links to high level languages.

Main Objective: To introduce students to the fundament of Computer Organization and Assembly Programming Language -Inter 8086 processor; To develop the basic link between Boolean Theory, Number Theory, Circuits, Processor, Machine organization and Assembly Language; to teach them how to design Assembly algorithms, and produce an error free program.

Objectives: **To teach the students in a way to make them understand theoretical foundations of modern computers, to learn and implement common assembly language algorithms, to develop solution modeling and implementation skills, to analyze, design and implement complex problems. To reach the objectives the students will study how to:**

Objective #1 Numbering systems and conversions: convert from one number system to another; work with Two's complement notation; Boolean functions and basic theorems;

Objective #2 Intro to Computer Organization: theoretical concepts to design digital diagrams, basic circuits and gates; the link between Boolean Functions, Circuits, Processor, Computer Organization, Micro code, Machine Code, Assembly language and High Level language; use and what are the general concepts of IA-32, and its Processor Architecture;

Objective #3 Concepts of Machine Instructions, Assembly and linking, assembly language programming, work and what are the basic elements of Assembly Language; constants, words, identities, directives, instructions; assemble, link and run a program; I/O devices; memory mapped I/O; keyboard input, read, display and copy, Common Interrupts, MS-DOS services; read and display 64 bit integers; link to high level language (C++);

Objective #4 Unconditional jumps, flags, subroutines, Stacks; arithmetic, flags, registers;   work with jump and loops;   search an area for positive numbers; Nested Procedure Calls; implement stack operations, work with shift and rotate instructions, 64 bit addition; define local variables, stack parameters and frames.

Objective #5 *Arrays, addressing modes and Floating Point memory management, indirect addressing;*

Objective #6 *Advanced procedures, local variables, stack parameters, strings.*

The instructor will include this semester the Consensus Theorem along with the half adder and adder.

COURSE EVALUATION: Basis for Evaluation:

In-class exams	- 34%
Programs	- 20%
Quizzes	- 16%
In Class Problems	- 10%
Final exam	- 20%

Grading Policy: *A:* 100% - 90%
                       B: 89% - 80%
                       C: 79% - 70%
                       D: 69% - 60%
                       F: Less than 59 %

The professor reserves the rights to reward students for continuous hard work.
The instructor reserves the right to drop student for not attending eight or more classes, although the action is not automatic and the student will be noticed about that.

Additional Assignments: In class check problems**;** Home Practice Problems**;** Extra Credit Problems.
The programs are to be submitted in an electronic format, all other assignments in a hard copy.

Final Test   Section: 001,002   **Date:** December 14, 2009, Mon   **Time:** 4:30PM-6:30PM

COURSE POLICIES
Programs: Programming is a part of this class. The only way to learn to program is to set down and write some programs. The next thing to do is make them work **correctly**. The knowledge obtained from reading and lectures only provides you with the basis; you have to actually do the programming in order to learn.
Programming grades: Programs will receive a letter grade based on the following criteria:
    The program compiles, executes, and produces the required correct results $\approx 95\%$.
    The program compiles, executes, and produces the output with minor errors $\approx 85\%$.
    The program compiles and executes but does not produce the required output $\approx 75\%$.
    The program is a good attempt but will not compile without errors $\approx 65\%$.
    The program is not a good attempt $\approx 55\%$.
Programs with copied code or other cheating (all or in part) = 0.
A program with extra features, fancy output and may have 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.

Short quizzes: *are to be solved independently during the class period. No makeup is allowed.*
Exams: *The two in-class exams will be given roughly at regular intervals. Students will be informed of the test dates around a week in advance. The test will take one class period and will be given at the scheduled times only. No opportunity will be given to take the test at earlier or later times except in cases of formal institutional excuses as mentioned above.*
Makeup: *Except in the case of a formal institutional excuse, no individual makeup test will be permitted*.
Cheating: test and quizzes results will be canceled in case of cheating.

Students with Disabilities: 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; Halladay Student Services Building; Room 303 A/D; Phone (903) 886-5150 or (903) 886-5835; Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

All students enrolled at the University shall follow the tents of common decency and acceptable behavior conducive to a positive learning environment (See Student's Guide Handbook, Polices and Procedures, Conduct).
For more information and online lectures, please visit the Web site:
http://www.tamu-commerce.edu/coas/math/FACULTY/SIRAKOV/

Only the way to pass through this class is to study, study and again study.