<h1 style="text-align:center">CSE 341 Computer Organization Spring 2018</h1>

Instructor: Dr. R. Sridhar **E-Mail: rsridhar**@buffalo.edu **Office:** 338K Davis Hall **Phone:** 645-3186

Office Hours: Tuesday 1:00 pm – 3:00 pm or by appointments through email.   *Any change(s) to office hours during the semester will be announced in class.*

Class: Monday, Wednesday, Friday 10:00am - 10:50pm; Recitation: miscellaneous

Description: This is a course in computer organization. Students will learn how various low-level components of a computer system are integrated into a larger system. Topics covered include: computer abstractions and technology, performance evaluation, instruction set architecture, arithmetic logic unit design, advanced computer arithmetic, datapath and control unit design, pipelining, memory hierarchy, input-output

Prerequisites: CSE 241 or equivalent

Textbook:
David A. Patterson and John L. Hennessy, *Computer Organization and Design: The Hardware/Software Interface*, 5th edition, Elsevier, 2014
Additional references may be cited throughout the semester

Objectives:
The objectives of this course are to give students an in-depth understanding of how a computer is organized & designed and familiarize students with tradeoffs at the hardware/software interface.
At the end of this course, each student should be able to:
• understand how a computer is organized and designed.
• analyze a computer system (or subsystem) and compare them based on cost and performance.
• effectively program in assembly language using the MIPS instruction set architecture
• design a memory subsystem for a computer understand the differences between pipelined and nonpipelined processors
• describe a circuit and simulate it using a hardware description language
• incorporate all of the above into designing a system

Grading Policy:
Evaluation: Exam #1 - 20 % • Exam 2 - 20 % • Final Exam – 25% • Project(s) - 15 % • Homework - 10 %; Quizzes – 10 %
Letter grades will be assigned only at the end of the semester.

Grade Assignment: (Letter grades carry normal numerical values)
(91-100 = A, 89-90 = A-, 87-88 = B+, 81-86= B, 79-80 = B-, 77-78 = C+, 71-76 = C, 66-70 = C-, 60-65 = D, 1-59 = F). Curving may be applied if deemed appropriate by the instructor.
Completed homework and projects are to be submitted at the *beginning* of the class on the due date.
Late policy: No late submissions will be accepted. Homework, projects, and exams may be submitted for regrades no later than two days after they are returned, unless otherwise stated in class. If you don't pick them up on the day they are returned, it does NOT extend the regrading deadline. Work done in pencil cannot be considered for regrade. When work is submitted for regrade, the entire work may be re-graded.

Incompletes:
As per departmental and University policy, Incomplete (I) grades are only given in cases where the student has done satisfactory work, but only lacks one or two assignments/exams because of a type of unexpected emergency or serious illness at the end of the semester. Do not request an "I" grade unless you believe that you actually fall into this category, and you are prepared to present evidence.
Incompletes are given only in these very rare circumstances.

Academic Dishonesty:
All work submitted for CSE 341 must be your own and must be done on an individual basis. Cheating on homework, a project, or an exam will result in automatic failure of the course. Please do read the departmental Academic integrity policy here at https://engineering.buffalo.edu/computer-science-engineering/undergraduate/resources-for-current-students/academic-integrity-students.html

Computer Usage:
All students are to have an account on the computer science and engineering department's cluster. This account will be used for: Projects; Homework assignments; Information will be disseminated via *e-mail* & the CSE 341 web site. Students are expected to check their UB *e-mail* and the CSE 341 web site regularly.

      URL: http://www.cse.buffalo.edu/~rsridhar/courses/cse341/

Disabilities: If you have a diagnosed disability (physical, learning, or psychological) that will make it difficult for you to carry out the course work as outlined, or that requires accommodations such as recruiting note-takers, readers, or extended time on exams or assignments, please advise the instructor during the first two days of the course so that we may review possible arrangements for reasonable accommodations. In addition, if you have not yet done so, contact the Office of Disability Services.

      Class Participation: Class participation is strongly encouraged. Quizzes may not be announced ahead.