

Prairie View A&M University
Roy G. Perry College of Engineering
Department of Electrical and Computer Engineering
Spring, 2019
CORUSE SYLLABUS

COURSE: ELEG4393 Computer Organization & Design
CLASS SCHEDULE: MWF (12:00 – 12:50pm), New Electrical Engr Bldg 115

INSTRUCTORS: Dr. Xiangfang (Lindsey) Li
Office: EE Building 336
Email: xili@pvamu.edu
Phone: (936)261-9918
Office Hours: M: 9:30am - 11:30am;
W & F: 9:30am -11:00am & 1:00pm - 3:00pm;
Or by appointment

COURSE DESCRIPTION

(3-0) Credit 3 semester hours. An introduction to computer organization using assembly and machine language. Number representation, computer arithmetic, instruction sets, I/O interrupts, and programming interrupts. Projects involve detailed study and use of a specific computer hardware and software system. Prerequisite: ELEG 3063

COURSE OBJECTIVES:

The objective of this course is to teach students (i) basic concepts of computer organization and hardware, (ii) help them understand the relationship between hardware and software and to focus on the concepts that are the basis for current computers, and (iii) recognize the generation change in computing from the PC era to the PostPC era. Materials covered included but not limited to: Instructions executed by a processor and how to use these instructions in simple assembly language programs; how to design the datapath and control for pipelined and non-pipelined processors; data and control hazards; the principles of memory hierarchy; and how processors, memory, and I/O are combined into a computer.

REQUIRED TEXTBOOK:

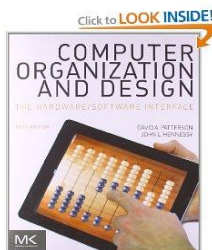


David A. Patterson & John L. Hennessy,
“*Computer Organization and Design, The Hardware/Software Interface-
RISC edition*”,
1st edition (April 27, 2017)

ISBN-10: 0128122757

ISBN-13: 978-0128122754

REFERENCE BOOKS:



David A. Patterson & John L. Hennessy,
“*Computer Organization and Design, The Hardware/Software Interface*”,
5th Edition.

Publication Date: October 10, 2013

ISBN-10: 0124077269

ISBN-13: 978-0124077263



David A. Patterson & John L. Hennessy,
“*Computer Organization and Design, The Hardware/Software Interface-
ARM edition*”,
1st Edition. 2016

ISBN-13: 978-0128017333
ISBN-10: 0128017333

COURSE ASSESSMENT:

The ABET Criteria and Outcomes to be assessed are:

7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

GRADING POLICY:

The following grading policy will be used as a guide to determine academic performance:

Homework & Attendance	15%
Quiz(s)	15%
Project(s)/Assignment(s)	20%
Midterm	25%
Final Exam	25%
Total	100%

Any deviation from the above grading policy will be discussed in advance with the class. Such deviations will be considered only in situations to provide learning enrichment opportunities for the entire class.

ON-LINE RESOURCES:

eCourses (<http://ecourses.pvamu.edu/>) will be used to disseminate course materials and organize discussions about the course to help improve the learning experience of the students.

HOMEWORK POLICY:

Homework and design problems will be assigned to complement each unit of instruction. Students will be required to turn in or demonstrate each assignment. Homework has to be handed on time. Late homework will **not** be accepted unless due to acceptable reasons (as defined by University policy). Make up test/quiz only apply to excused absence of class of the test date. Student must contact instructor immediately for scheduling make up time **within one week of the missing test/quiz**.

QUIZ POLICY:

There will be multiple quizzes throughout this course to motivate students to follow the instruction closely. The quizzes will be administered in the beginning of the class. There will be no make up quiz if you are absent or late for the class. Make up quiz only apply to excused absence, student must contact instructor immediately for scheduling make up time **within one week of the missing quiz**.

PROJECT/ASSIGNMENT POLICY:

There will be assigned project(s)/assignment. The project(s) will help the students to absorb the lectures through an interactive approach. Students are required to hand in the project reports.

EXAM POLICY:

There are one midterm and one final exam. Every student must take all exams on the assigned dates. Any student who misses an exam without a valid excuse will automatically receive zero for that exam. Make-up exams will be administered in accordance with university policy.

ETHICS:

Cheating or plagiarism on assignments or exams will not be tolerated. Proven cases of ethical violations will result in a zero for the assignment/exam and possibility of further disciplinary actions in accordance with university policies.

CLASS ATTENDANCE:

See the University Class Attendance Policy, Effective September 1, 1998. PVAMU requires regular class attendance. Attending all classes supports full academic development of each student. Excessive absenteeism may result in a student's course grade being reduced to a grade of "F". Accumulation of one week of unexcused absences constitutes excessive absenteeism.

STUDENT ACADEMIC APPEAL PROCESS

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

COLLEGE OF ENGINEERING TEXTBOOK POLICY

Students must acquire the textbook that is listed as "required" on the course syllabus. The textbook must be acquired by the 10th class day. Students are not allowed to share textbooks with other students who are currently registered in the same class. Failure to acquire (or show proof of purchase) the required textbook by the 10th class day will result in the student being administratively dropped from the course. The University will assess financial obligations for the course to the student as with any other dropped class according to the fee schedule. In addition, your financial aid may be affected by the subsequent registration action(s). Go to <http://www.pvamu.edu/pages/195.asp> for the Roy G. Perry College of Engineering Textbook Policy.

CONDUCT:

1. Students will conduct themselves in a manner that is respectful to their fellow classmates
2. Cell phones MUST be turned off during class time.
3. No cell phones or other electronic devices during exams and tests.
4. Students are NOT allowed to wear caps/hats in class

AMERICANS WITH DISABILITY (ADA) STATEMENT:

Students with disabilities who believe that they may need an academic adjustment in this class, are encouraged to contact the Office of Disability Services at (936) 857-2610/2620 as soon as possible. Once you have received a letter of adjustment from the office, kindly make an appointment with me to discuss appropriate adjustments for this class.

COURSE OUTLINES

WEEK	DATE	TOPICS	ASSIGNMENTS
Week 1	Jan. 14, 16, 18	Introduction	
Week 2	Jan. 23, 25	Introduction, Chap 1 – Computer Abstractions and technology	
Week 3	Jan. 28, 30 Feb. 1	Finish Chap 1, start Chap 2	
Week 4	Feb. 4, 6, 8	Chap 2 – Instructions: Language and computer	
Week 5	Feb. 11,13, 15	Chap 2 – Instructions: Language and computer	
Week 6	Feb. 18, 20, 22	Chap 3 – Arithmetic for computer	

Week 7	Feb. 25, 27 Mar. 1	Chap 3 – Arithmetic for computer	
Week 8	Mar. 5, 7	Finish Chap 3, start Chap 4	
	Mar 4, 6	Chap 3 – Arithmetic for computer, start chap 4	
	Mar 7-9	Midterm	
	Mar. 11-15	Spring break	
Week 10	Mar. 18,20,22	Chap 4 – The processor	
Week 11	Mar.25, 27, 29	Chap 4 – The processor	
Week 12	Apr.1, 3, 5	Chapter 5: Large and Fast: Exploiting Memory Hierarchy	
Week 13	Apr. 8,10, 12	Chapter 5: Large and Fast: Exploiting Memory Hierarchy	
Week 14	Apr. 15,17	Chap 6 Parallel processor from client to cloud	
	Apr. 19	No class, good Friday	
Week 15	Apr. 22,24,26	Chap 6 Parallel processor from client to cloud; Project presentation	
Week 16	Apr. 29	Review Day	
	May. 1-7	Final Exam Period	