Course	**CS/SE 3377.506 Systems Prog. in UNIX and Other Envs**
Professor	Sridhar Alagar
Term	Spring 2022
Meetings	MW 7:00 pm – 8:15 pm

Professor's Contact Information

Office Phone	(972) 883-4161
Other Phone	(972) 883-2185 (CS Department Phone Number)
Office Location	ECS South 3.210
Email Address	sridhar@utdallas.edu
Office Hours	**Only on MS Teams**. Tue 11 to 1 PM and Thur 12 to 1 PM, or any other suitable time through appointment.
Teaching Assistant	TBA

General Course Information

Pre-requisites, Co-requisites, & other restrictions	Pre-requisites: CE 2336 or CS 2336 or TE 2336 with a grade of C or better or equivalent All programming projects/exercises must be implemented only in **C.** **Students are expected to have completed CS 1336 and CS 1337.**
Course Description	Basic UNIX concepts, commands and utilities, organization of UNIX file system including links and access control, creating and managing UNIX processes and threads, implementing algorithms using shell scripts, basic networking concepts including socket and client-server programming, inter-process communication using pipes and signals, using a version control system to manage work, and introduction to cloud computing. Design and implementation of a comprehensive programming project is required..
Learning Outcomes	1. Ability to use Unix/Linux operating system (command line interface, shell scripting, regular expression). 2. Ability to use Unix/Linux programming environment and development tools. 3. Ability to program with Unix/Linux processes, threads, and interprocess communication facilities. 4. Ability to program with Unix/Linux file system, file input and output, and redirection. 5. Ability to develop programs for network environment (client-server model, socket programming, and cloud computing).* * Note. CLO #5 "Cloud computing" is at conceptual-level
Required Texts & Materials	1. A Practical Guide to Linux Commands, Editors, and Shell Programming, 3ed. Mark G. Sobell. Prentice Hall. © 2012. ISBN-10: 0-13-308504-X. ISBN-13: 9780133085044 Note. 4ed is also available and acceptable. (Available online & free through UTD Library. Login using your NETID@utdallas.edu and password. If it prompts for your university, select Not listed.) This book is referred as [Sobell]. Sobell source code: http://www.sobell.com/CR3

	2. Advanced Programming in the UNIX Environment, 3e. W. Richard Stevens and Stephen A. Rago. Addison-Wesley. © 2013. ISBN-10: 0-321-63773-9. ISBN-13: 9780321637734 (Available online & free through UTD library. Login using your NETID@utdallas.edu and password. If it prompts for your university, select Not listed.) This book is referred as [APUE]. APUE source code: http://www.apuebook.com/code3e.html 3. The C programming language (second edition), Brian W. Kernighan and Dennis M. Ritchie. Prentice Hall, Inc., 1988. ISBN: 0-13-110362-8 (Available online through UTD library.) This book is referred as [K&R].

Assignments & Academic Calendar

Week	***Dates***		***Topic***	***Reading***	***Assignments(A), Projects(P)***
1		*18-Jan*	Syllabus & Introduction. • Prerequisite Form • Unix/Linux Introduction • First log in to cslinux1.utdallas.edu (to download, install and try mobaXterm or ssh or putty to connect cs1, etc.)	*Sobell chapters 1 and 2*	*A1*
2	*23-Jan*	*25-Jan*	Unix/Linux Introduction & Commands • Basic Unix/Linux Commands • Shell basics	*Sobell ch 3 & 4* *APUE ch 1*	*A2*
3	*30-Jan*	*1-Feb*	C review, debugger, editor	*K & R*	*A3*
4	*6-Feb*	*8-Feb*	Unix File Systems and IO, and API	*APUE ch 2, 3 & 4*	*A4*
5	*13-Feb*	*15-Feb*	Process Creation, process control	*APUE ch 7, 8*	*A5*
6	*20-Feb*	*22-Feb*	Inter-process communication	*APUE ch 15*	*A6. P1*
7	*27-Feb*	*1-Mar*	Signal, Threads	*APUE ch 10*	*A7*
8	*6-Mar*	*8-Mar*	Exam 1, Threads		*A8*
9	*13-Mar*	*15-Mar*	Spring break	*APUE ch 8 & 10*	
10	*20-Mar*	*22-Mar*	Threads, Makefile	*APUE ch 11& 12*	*A9, P2*
11	*27-Mar*	*29-Mar*	Data communication basics		*A10*
12	*3-Apr*	*5-Apr*	Socket Programming	*APUE ch 16*	*A11*
13	*10-Apr*	*12-Apr*	Socket Programming • Client-Server • Concurrent Server	*APUE ch 17*	*A12, P3*
14	*17-Apr*	*19-Apr*	Shell Script Programming with bash shell	*Sobell ch 8 & 10*	*A13*
15	*24-Apr*	*26-Apr*	Regular Expression (RegEx)		*A14*
16	*1-May*	*3-May*	*Cloud Computing*		
17	*8-May*		Exam 2		

Important Dates and Times	• Exam 1: Mar 6, 2023 @ Testing center. Starts at 1 PM. Ends at 9 PM. Exam duration: 75 minutes. • Exam 2: May 8, 2023 @ Testing center. Starts at 1 PM. Ends at 9 PM. Exam duration: 75 minutes

Course Policies

Class Materials	The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.
Class Attendance	Regular attendance is highly recommended. As per the Department of Computer Science policy, three consecutive absences lead to one letter grade drop. Four consecutive absences lead to a F. http://cs.utdallas.edu/education/undergraduate/attendance-policy/
Class Participation	Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.
Class Recordings	Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct. The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

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<tr><td>Grading Criteria</td><td>Exam 1: 15%, Exam 2: 15%, Programming Projects (3): 40%, Assignments (weekly): 30%

All programming projects/exercises must be implemented only in C. Students may be asked to demonstrate their projects to the TA to receive a grade on them.

Table below is indicative letter grade for total points scored. There may be some curving, but not guaranteed.
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<tr><td>A+:</td><td>95% and above</td><td>A:</td><td>90% and above</td><td>A-:</td><td>85% and above</td></tr>
<tr><td>B+:</td><td>80% and above</td><td>B:</td><td>76% and above</td><td>B-:</td><td>73% and above</td></tr>
<tr><td>C+:</td><td>70% and above</td><td>C:</td><td>66% and above</td><td>C-:</td><td>63% and above</td></tr>
<tr><td>D+:</td><td>60% and above</td><td>D:</td><td>56% and above</td><td>D-:</td><td>53% and above</td></tr>
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<tr><td>Make-up Exams</td><td>Make-up examinations will be offered only if the student has a valid medical reason and produces a doctor’s letter.

If a student is absent for several classes because of job related obligations, they will not be eligible for an incomplete grade. In such instances, the student is advised to drop the course.</td></tr>
<tr><td>Extra Credit</td><td>No extra credit work will be assigned.</td></tr>
<tr><td>Late Work</td><td>Assignments/Projects are due on the specified date. Turn in what is completed by the deadline for partial credit. No late submissions will be accepted.</td></tr>
<tr><td>Classroom Citizenship</td><td>The instructor encourages students to take active part in class discussions. No question is too simple/stupid to be asked. So, do not hesitate.</td></tr>
<tr><td>Comet Creed</td><td>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”</td></tr>
<tr><td>Academic Support Resources</td><td>The information contained in the following link lists the University’s academic support resources for all students.

Please go to http://go.utdallas.edu/academic-support-resources.</td></tr>
<tr><td>UT Dallas Syllabus Policies and Procedures</td><td>The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus. Please review the sections regarding the credit/no credit grading option and withdrawal from class.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.</td></tr>
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These descriptions and timelines are subject to change at the discretion of the Professor.