Course	**CS/SE 3377.004 Systems Prog. in UNIX and Other Envs**
Professor	Sridhar Alagar
Term	Fall 2022
Meetings	MW 2:30 pm – 3:45 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. TR 11:30 to 12:30 PM, W 1:20 to 2:20 PM, or any other suitable time through appointment.
Teaching Assistant	TBA

Course Modality and Expectations

Instructional Mode	In-person.
Course Platform	elearning
Expectations	Participate in classroom discussions. Start projects early and complete them. Allocate required time every week and keep up with the teaching in the class. Complete assignments on time and do exams well.

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.

Please see http://go.utdallas.edu/syllabus-policies.

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. 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 Materials

The instructor will 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.

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 & free through UTD library.) This book is referred as [K&R].

Assignments & Academic Calendar

Week	***Dates***		***Topic***	***Reading***	***Assignments(A), Projects(P)***
1	*22-Aug*	*24-Aug*	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	*29-Aug*	*31-Aug*	Shell basics and commands C review, editor	*Sobell ch 3 & 4* *APUE ch 1*	*A2*
3	*5-Sep*	*7-Sep*	C review, debugger	*K & R*	*A3*
4	*12-Sep*	*14-Sep*	Unix File Systems and IO, and API	*APUE ch 2, 3 & 4*	*A4*
5	*19-Sep*	*21-Sep*	Process Creation, process control	*APUE ch 7, 8*	*A5*
6	*26-Sep*	*28-Sep*	Inter-process communication	*APUE ch 15*	*A6. P1*
7	*3-Oct*	*5-Oct*	Signal, makefile	*APUE ch 10*	*A7*
8	*10-Oct*	*12-Oct*	Exam 1, Threads	*APUE ch 8 & 10*	*A8*
9	*17-Oct*	*19-Oct*	Thread creation and control	*APUE ch 11& 12*	
10	*24-Oct*	*26-Oct*	Data communication basics		*A9, P2*
11	*31-Oct*	*2-Nov*	Socket Programming	*APUE ch 16*	*A10*
12	*7-Nov*	*9-Nov*	Socket Programming • Client-Server • Concurrent Server	*APUE ch 17*	*A11*
13	*14-Nov*	*16-Nov*	Shell Script Programming with bash shell	*Sobell ch 8 & 10*	*A12, P3*
14	*21-Nov*	*23-Nov*	Fall break		
15	*28-Nov*	*30-Nov*	Regular expression		*A13*
16	*5-Dec*	*7-Dec*	Cloud computing		*A14*
17	*12-Dec*		Exam 2		

Important Dates and Times	• Exam 1: Oct 10, 2022 @ Testing center. Starts at 2:30 PM. Ends at 5:30 PM. Exam duration: 75 minutes • Exam 2: Dec 12, 2022 @ Testing center. Starts at 2:30 PM. Ends at 5:30 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.
Classroom Conduct Requirements Related to Public Health Measures	UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester to the extent allowed by state governance. Texas Governor Greg Abbott's Executive Order GA-38 prohibits us from mandating vaccines and face coverings for UT Dallas employees, students, and members of the public on campus. However, we strongly encourage all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. Comets are expected to carry out Student Safety protocols in adherence to the Comet Commitment. Unvaccinated Comets will be expected to complete the Required Daily Health Screening. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003.
Class Attendance	Regular attendance is highly recommended. Students who miss classes mostly get poor grades.
Class Participation	Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. 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.
Grading Criteria	**Exam 1: 20%, Exam 2: 20%, Programming Projects (3): 30%, 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>
<tr><td></td><td>To pass the course, a student must pass separately in examinations and programming projects. Table below is indicative letter grade for total points scored. There may be some curving, but not guaranteed.
<table>
<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>
</table></td></tr>
<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, he/she 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.