

Remote / Online Course Syllabus

Course Information

Course Number/Section **CS3377.0W1, SE3377.0W1**
Course Title **C/C++ Programming in a UNIX Environment**
Term **Fall 2020**

Professor Contact Information

Professor Richard Min, Ph.D. MBA, MS (CE), STM, M.Div
Office Phone 972-883-4522
Other Phone
Email Address rkm010300@utdallas.edu
Office Location ECSS 4.609
Online Office Hours TTh 4-6pm
Other Information

Note: state time/day and how office hours will be held, e.g. BlackBoard Collaborate, MS Teams, or WebEx (add appropriate links) and/or phone call – optional; please ensure student’s identity in adherence to FERPA

Course Modality and Expectations

Instructional Mode	List the instructional mode for the course by referencing to this page for the description: https://www.utdallas.edu/fall-2020/fall-2020-registration-information/ The mode of this course is: Online
Course Platform	Explain how this course will be delivered, e.g. BlackBoard Collaborate, MS Teams, or WebEx. Provide technical information and appropriate links. The lectures will be delivered via the recorded video, ppts, reading materials, etc. along with MS Teams (or Blackboard Collaborate) for streaming. Please check elearning announcement for the delivery tool. The additional materials will be provided via elearning.
Expectations	Describe your expectations of students. Each student is expected to study the materials as scheduled. Check elearning for detailed or additional instructions. Only item (minimum requirement to be synchronous) is to take each test as scheduled (or to arrange and take your makeup test to be taken before the scheduled test date). Test date/time will be scheduled and announced during the class sessions in Week01.

<p>Asynchronous Learning Guidelines</p>	<p>Describe what students should do if they select asynchronous instruction and how it will apply to lectures and/or exams. Provide web link at: https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/</p> <p>The lectures (via recorded video, ppts, reading materials, etc.) will be provided for review or self-study for each week.</p> <p>Note that you are responsible for your own learning for this online course "in time" (with the video/ppt and learning material provided).</p> <p>The only item (minimum requirement to be synchronous) is to take each test as scheduled (or to arrange and take your makeup test to be taken before the scheduled test date). Test date/time will be scheduled and announced during the class sessions in Week01. For any exception or makeup test, each student should contact the instructor and get the approval at least two weeks before the test date unless there is an exception approved by UTD (e.g., serious illness, etc.).</p> <p>Note. All course modes will have an asynchronous (i.e., <i>does not happen at the same time</i>) online learning access for students who cannot come or choose not to return to campus. For more information, please check: https://www.utdallas.edu/fall-2020/fall-2020-registration-information/ https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/</p>
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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. 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](#).

Note: if the instructor records any part of the course, then the instructor will need to use the following syllabus statement:

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. 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. 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. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

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](#).

Course Pre-requisites, Co-requisites, and/or Other Restrictions

(including required prior knowledge or skills)

CE 2336 or CS 2336 or TE 2336 with a grade of C or better or equivalent.**

** That is, you should have also completed CS1336 & CS1337 (or equivalent courses) in C/C++ programming and/or have a proficient programming experience with C/C++.

Course Description

CS 3377 C/C++ Programming in a UNIX Environment (3 semester hours) Advanced programming techniques utilizing procedural and object oriented programming in a UNIX environment. Topics include file input and output, implementation of strings, stacks, queues, lists, and trees, and dynamic memory allocation/management. Design and implementation of a comprehensive programming project is required.

Student Learning Objectives/Outcomes

1. Ability to use the UNIX operating system interactively as a user (commands)
2. Ability to express algorithmic solutions using shell scripting (utilities)
3. Ability to understand and use regular expressions
4. Ability to use the UNIX programming environment (editor, compiler and linker)
5. Ability to understand UNIX processes (creation and control)
6. Ability to perform input/output of binary files
7. Ability to use interprocess communication (pipes, sockets and signals)
8. Ability to understand the UNIX file system
9. Ability to understand and use version control system

Required Textbooks and 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.
Sobell source code: <http://www.sobell.com/CR3/>
<https://learning.oreilly.com/library/view/practical-guide-to/9780134774626/>
(Available online & free via UTD Library => eBook => Safari) This book is referred as [**Sobell**].
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
APUE source code: <http://www.apuebook.com/code3e.html>
<https://learning.oreilly.com/library/view/advanced-programming-in/9780321638014/>
(Available online & free via UTD Library => eBook => Safari) This book is referred as [**APUE**].

Suggested Course Materials

TBA in elearning

Textbooks and some other bookstore materials can be ordered online or purchased at the [UT Dallas Bookstore](#).

Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the [Getting Started with eLearning](#) webpage.

Course Access and Navigation

This course can be accessed using your UT Dallas NetID account on the [eLearning](#) website.

Please see the course access and navigation section of the [Getting Started with eLearning](#) webpage for more information.

To become familiar with the eLearning tool, please see the [Student eLearning Tutorials](#) webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The [eLearning Support Center](#) includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication

This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the [Student eLearning Tutorials](#) webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources

Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the [eLearning Current Students](#) webpage for more information.

Server Unavailability or Other Technical Difficulties

The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online [eLearning Help Desk](#). The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Academic Calendar

***Note:** The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor. Test date/time is set tentatively and subject to be changed if needed.

Dates	UNIT in Week#	TOPIC/LECTURE	READING*	ASSESSMENT Weekly Activity items (usually 2 Labs, Reading & 1 Essay for each week. See elearning for detail) and Test	DUE DATE Weekly Activity items due by Friday 5pm of the week
08/18 T 08/20 Th	1	Course Orientation: Syllabus & Course Introduction. 1. Prerequisite Form by 8/28 F 5pm 2. Test Dates (or to arrange your Makeup test by 8/29 F) 3. Unix/Linux Introduction 4. First log in to cslinux1.utdallas.edu	Sobell Ch1-Ch2	No Week01 Activity	

08/25 T 08/27 Th	2	Unix/Linux Introduction & Commands <ul style="list-style-type: none"> • Connect to cs1 from your laptop (with MobaXterm or SSH) • Learn basic Unix/Linux Commands • Simple File editing with vi editor. • Simple C programming with hello.c 	Sobell Ch3-Ch4 APUE Ch01	Week02 Activity (to download, install and try mobaXterm or ssh or putty to connect cs1, etc.) See Week02 Activity folder in elearning for detail	08/28 F 5pm
09/01 T 09/03 Th	3	Unix, Linux Commands (Advanced) File Systems (Sobell Ch4) Shell (Sobell Ch5) Editors (Sobell Ch6) Makefile	Sobell Ch5-Ch6 APUE Ch02	Week03 Activity	09/04 F 5pm
09/08 T 09/10 Th	4	Bourne Again Shell – bash (Sobell 8, 10) Shell Script Programming with bash	Sobell Ch8 & Ch10	Week04 Activity	9/11 F 5pm
09/15 T 09/17 Th	5	MySQL (Sobell Ch13) sqlite3 prog with C	Sobell Ch13 APUE Ch03	Week05 Activity	9/18 F 5pm
09/22 T 09/24 Th	6	Python prog (Sobell Ch12) Python Tools Unix/Linux System Prog & API APUE Ch01	Sobell Ch12 APUE Ch04	Week06 Activity	9/25 F 5pm
09/29 T 10/01 Th	7	Unix File Systems and IO, and API (APUE Ch03-Ch04)	APUE Ch07-Ch08	Week07 Activity Test1	10/02 F 5pm Test1 9/29 T 8pm online
10/06 T 10/08 Th	8	Unix/Linux Process (APUE Ch07-Ch08)	APUE Ch09-Ch10	Week08 Activity	10/09 F 5pm
10/13 T 10/15 Th	9	Shell and Signal (APUE Ch09-Ch10)	APUE Ch11	Week09 Activity	10/16 F 5pm
10/20 T 10/22 Th	10	Thread Programming (APUE Ch11)	APUE Ch14	Week10 Activity	10/23 F 5pm
10/27 T 10/29 Th	11	Interprocess Communication (APUE Ch11.6 & Ch15)	APUE Ch15	Week11 Activity	10/30 F 5pm
11/03 T 11/05 Th	12	Socket Programming (APUE Ch16)	APUE Ch16	Week12 Activity	11/06 F 5pm

11/10 T 11/12 Th	13	Socket Programming Client-Server Concurrent Server	APUE Ch16	Week13 Activity	11/13 F 5pm
11/17 T 11/19 Th	14	Advanced Topics VCS (Git, Github, etc) Oracle VirtualBox	Reading materials in Week14 Activity folder in elearning	Week14 Activity	11/20 F 5pm
11/24 T	15	Advanced Topics Review for Test2	Reading materials in Week15 Activity folder in elearning	Week15 Activity All My Essays	11/25 F 5pm
12/03 T	16	Final Exam Week	12/02 W – 12/08 T	Test2	Test2 12/03 Th 8pm online
		Final Grade Due by 12/14 M			

For Required Reading.

APUE - *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 via UTD Library => eBook => Safari)

Sobell – *A Practical Guide to Linux® Commands, Editors, and Shell Programming*, Third Edition.
Mark G. Sobell. Prentice Hall. © 2012. ISBN-10: 0-13-308504-X. ISBN-13: 9780133085044
(Available online & free via UTD Library => eBook => Safari)

Proctored Final Exam Procedures

If your course has a proctored exam requirement, please see the [UTD Testing Center](#) webpage and [Distance Learning Proctored Exams](#) webpage to make arrangements.

Grading Policy

Letter grades will be assigned as follows:

97-100	A+	93-96	A	90-92	A-
87-89	B+	83-86	B	80-82	B-
77-79	C+	73-76	C	70-72	C-
67-69	D+	63-66	D	60-62	D-
Below 60	F				

Note 1. Each range shown above is inclusive and without any rounding-off. For example, 93-97 for grade A is for the score falling in the range between 93.000 and 96.999. The grade of 92.999 is for A-.

Note 2. In elearning, "Running" total in your gradebook shows the current weighted grade based on your graded work only based on what you have submitted and graded. For example, if you have done only Test1, Assignment1, Weekly postings so far (but you have missed Test2 and missed Assignment2 totally), current total grade will be based on only those entries that you have submitted and done.

50% for 2 Tests. 25% for each test. Each test will be taken via elearning. Each test will be closed-book online test via elearning Honorlock with Google Chrome browser (not at Test Center) during the time of restriction due to covid19 for 1-hour or 2-hour examination. Time and detail of Test will be announced later in elearning. ~~Each student should make a seat reservation prior to each test (as soon as possible). All exams are closed book and closed notes.~~ Exams will focus more on concepts and less on details. Additional study-material or documentation will be provided to avoid the need for memorization as much as possible. We will likely take all the tests in the testing center as scheduled. You can expect to see a few coding/analysis questions, a few short answer questions and a few multiple-choice questions in each test. Instructor is responsible for grading all the tests.

Any make-up tests will be arranged and scheduled during the same week (usually Tuesdays prior to the actual test date) at the discretion of the instructor. There should be a valid reason for scheduling make-up tests & they need to be coordinated with the instructor, 1-2 weeks prior to the test date except for serious medical condition (with Doctor's or Hospital's certificate will be required as a valid proof. Without it, there will be 15% penalty for any makeup test after the scheduled test date). It is unlikely that curving will be used to boost the final grades. If the instructor decides to do it, only the test scores will be boosted, but the tests' contribution will be clipped at 60%. In other words, curving will NOT make up for the points lost in all other assignments. So, it is extremely important to complete them in timely manner.

50% for Weekly Activity items. Each activity item is also referred as an assignment or a project. Each weekly activity item may include weekly reading, weekly labs (usually 2 labs), weekly reading and essay (summary or reflection of your reading), and/or any bonus activity of the week. Each weekly activity item is available by Monday 8am and is due by Friday 5pm of the week. No late submission is accepted.

You are expected to start working on them as soon as they are posted. Do not expect us to rescue you on the day of submission. You can upload each item many times but the last submission will be graded. No Late submission is accepted. My advice is to submit whatever you have done (your best effort) before the due and/or by the due date, and to seek for any further discretion and/or consideration if you may need. All these weekly activity items should be done in Unix, Linux or Mac, and you will hand-in your projects directly in Linux.

Submit each activity item through elearning (each item in the week's activity folder). More details on Weekly Activity, Requirement, and Submission steps will be given with eLearning. For some activity item (e.g., lab), TA may schedule a demo session and you are required to schedule your demo with TA (for 5-10 minutes) and do your demo to TA in a week after the due date. If you have any conflict for the demo schedule, you may do the demo to the instructor (and/or you record your demo in a video format using your webcam using MS Teams, elearning Collaborate, WebEx, or video recording of your demo (to be uploaded to learning and to notify TA).

Note. If you need a quick response for an urgent issue or concern, you may send an email to instructor or TA directly via email (instead of posting here) to get a quicker response and/or immediate attention.

An instructor who believes a student has committed an act of plagiarism should take appropriate action, which includes the issuing of a “penalty grade” (that is, F for the course) for academic dishonesty. For any "minor" plagiarism charge, the maximum letter grade for the course would be B+ or lower.
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Course & Instructor Policies

(make-up exams, extra credit, late work, special assignments, class attendance, classroom citizenship, etc.)

Instructor is responsible for grading all the tests. TA will be responsible for grading all weekly activity items (any assignment or project). So, contact the TA directly for any grading related discrepancies (and cc to the instructor). It is not possible to give a detailed feedback for each weekly activity item or test question due to large number of students enrolled in our classes. If you need more details/clarification, you are encouraged to meet the TA/instructor via online during office hours & get personal attention. Do not rely on email alone to get the full response. If you are stuck with your assignment, it is better to turn in what you have and send us email. We will revise your submission and give some guidance. Your next submission will override the previous submission - TA will always grade the latest submission for each project. You can use email to get help for weekly assignments. Include the detailed problem description & applicable error messages, zip all your source files and include it with your email too. Do not just say "my program does not work" and expect us to figure out everything - you need to help us to help you efficiently. We expect to complete grading assignments (projects), weekly activities or quizzes, and tests in a week or so. However, when the schedule gets too busy, it can be as long as 2 weeks before the grades are assigned. It is the students' responsibility to review the grade details when they become available and follow up for clarifications if needed.

Make-up exams

Any make-up tests will be scheduled during the same week (usually one or two days prior to the actual test date) at the discretion of the instructor. There should be a valid reason for scheduling make-up tests and they need to be coordinated with the instructor, 1-2 weeks prior to the test date except for serious medical condition (with Doctor's or Hospital's certificate will be required as a valid proof). **Without any valid reason, there will be 15% penalty for any makeup test scheduled after the scheduled test date.**

Extra Credit

Please check for any extra or bonus credit work posted in elearning.

Late Work

No late submission of any work is accepted unless stated otherwise.

Special Assignments

Not Applicable or check with Instructor.

Class Participation

For in-class course **or especially online course**: it will be tracked and assessed via your timely weekly activity work and tests as your participation. These items will be counted as your weekly class-participation via elearning and online.

Classroom Citizenship

Please review the UTD policy and guideline on Student behavior and conduct, academic honesty and integrity in <https://www.utdallas.edu/conduct/integrity/> and UTD BAIT team in <https://www.utd.edu/conduct/bait/>

Also note that all the course materials are only for your individual and personal use and for this course. Do not share or redistribute any of the course materials in any form or means

with other. Do not make any of the course materials available via Internet or web site (e.g., git or github, tutorial or quizlet site).

Comet Creed

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.”

Academic Support Resources

The information contained in the following link lists the University’s academic support resources for all students.

Please go to [Academic Support Resources](#) webpage for these policies.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus.

Please go to [UT Dallas Syllabus Policies](#) webpage for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.