



CSCI 515.01W and 1LW FUNDAMENTALS OF PROGRAMMING C/C++

Course Syllabus: Spring 2021

INSTRUCTOR INFORMATION

Instructor: Dr. Yuehua Wang

Office Location: JOUR 230

Office Hours: M 2:00 PM - 3:00 PM or other time by appointments via emails

Office Phone: 903-886-5802

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University Email Address: Yuehua.Wang@tamuc.edu

Preferred Form of Communication: Discussion board and Email

Communication Response Time: Within 24 hours on weekdays. If emails are sent on Friday, the replies will be available by the following Monday.

COURSE INFORMATION

Lecture: Web Based Class (myLeoOnline, YouSeeU-Virtual Classroom, and Zoom)

Lab: Web Based Lab

Weekly Meeting Time: Monday 2:00 PM-3:00 PM

Credit hours: 4

Materials – Textbooks, Readings, Supplementary Readings

Textbooks

There are no required textbooks for this course as many open-source C++ programming textbooks and online resources can be found online. In most cases, the instructor's slides are sufficient for understanding the material. The following textbooks are very useful as references or tutorials for C++ programming.

The syllabus/schedule are subject to change.

- D . S. Malik, C++ Programming: From Problem Analysis to Program Design, 7th Edition. Cengage Learning, ISBN 9781285852744 or 8th, or 6th, or 5th edition
- C++ HOW TO PROGRAM, 10th Edition, by Deitel and Deitel, published by PEARSON, 2017, with ISBN-13: 978-0134448237 (ISBN-10: 0134448235)
- Introduction to Programming in C++, by Maslanka, published by Kendall Hunt, 2009, ISBN: 978-0-7575-6536-6

Web resources are also available. You can access the following sites with great tutorials and program examples.

- Tutorialspoint. <https://www.tutorialspoint.com/cplusplus/>
- C++ Language – C++ Tutorials. <http://www.cplusplus.com/doc/tutorial/>
- C++ Tutorial - Learn C++ - Cprogramming.com. <https://www.cprogramming.com/tutorial/c++-tutorial.html>

Coding Environment

There is a set of great free C++ compilers and IDEs (integrated development environments that have many built-in tools for editing, compiling, running, and debugging programs) available for major OS platforms. Download one that suits your platform.

- Linux
 - Compiler: GCC that comes with Linux. Please check whether it has been installed on your system.
 - IDE: Vim (<https://vim.sourceforge.io/download.php>), Eclipse CDT (<https://www.eclipse.org/cdt/>), Clion (<https://www.jetbrains.com/clion/>)
- Windows
 - Compiler: MINGW at <http://www.mingw.org/>
 - IDE: Dev C++ (<http://www.bloodshed.net/devcpp.html>), Microsoft Visual Studio Express 2013(<http://www.visualstudio.com/en-us/downloads>), Eclipse CDT (<https://www.eclipse.org/cdt/>), Clion (<https://www.jetbrains.com/clion/>)
- Mac OS
 - IDE: Apple Xcode which comes bundled with GCC. You can download it at <https://developer.apple.com/ios/>
 - CLion: Download at <https://www.jetbrains.com/clion/>

Course Description

This course begins with fundamental concepts of mobile computing and application development with emphasis on real-time eye tracking and attention prediction. Studies on existing works in the literature, including hardware, software, libraries, methods, and datasets. Learns to develop applications in unconstrained mobile learning environments

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based on open-source libraries and tools. Gains practical experiences in data collection, analysis, and visualization.

Student Learning Outcomes

- 1) to understand the basic elements of a computer program including documentation, data declaration, and procedural operations
- 2) to edit, translate, and execute a computer program
- 3) to write programs that input data from keyboard/file and output to the console/file
- 4) to apply control structures to alter the sequential flow of execution of program statements including selection and iteration structures
- 5) to create user-defined functions, develop programs consisting of multiple functions, and master function parameter passing
- 6) to understand the internal representation of the various data types
- 7) to review the language syntax and learn new syntax you have not previously used in programming applications
- 8) to correctly solve programming problems and learn how to develop algorithms
- 9) to examine the internal representation of two- and three-dimension arrays in C/C++
- 10) to understand dynamic memory allocation, parameter passing, the use of pointers

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Using computers, operating systems, program compilers, IDE, and Microsoft Word

Tips for Success in the Course

- 1) Be here as often as possible.
- 2) Read assignments and be ready for what we'll be talking about in class.
- 3) Ask if you don't understand something.
- 4) Get help (sooner rather than later) if you have problems:
 - dept lab tutors in Jour 200 or 101-102
 - the Academic Success Center also provides tutoring in the library for a wide variety of subjects
 - make friends with at least one person in class so you can compare notes or check for anything you might have missed
 - get a study group together
- 5) Stay caught up as much as possible.

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- 6) Get started on programs so that you have time to get help if you find you need some help.
- 7) Do your own work. Consult with others about problem-solving strategies, but code it yourself.
- 8) What you get out of any class depends to a very large degree on what you're willing to put into it. Get in the habit of writing little practice programs to try out new language features as we learn them. As you write more programs (even small ones), the process becomes easier, you're much more likely to remember how the language works, and you get much better at programming logic (the hardest part of computer programming).
- 9) Know your own limits and don't over-extend yourself any more than necessary.

Instructional Methods

This course is lecture supplemented by text and D2L. To get started with the course, go to: <https://leo.tamuc.edu>. You will need your CWID and password to log in to the course.

Student Responsibilities or Tips for Success in the Course

- 1) Make-up examinations for exams will not be given. If you have a compelling and documented reason for not being able to attend the exam, you must make the alternative arrangements before the examination. Grades will not be curved for the course, and you will receive the grade that you earn through your performance on the assignments, exams, project, and bonus questions. There will be no individual exceptions to the grading policy, and, therefore grades of a C or F are possible.
- 2) No late work will be accepted except under special extenuating circumstances when prior arrangements have been made with the instructor.
- 3) Grades will be posted within one week after assignment due date.
- 4) You are responsible to check your grades after each assignment. Please report any error or inconsistency to the instructor within 7 days if possible.
- 5) All assignments must be submitted using [D2L](#) if applicable. Students must adhere to the following rules when submitting assignments. Failure to do so will affect their grades.

- **File Name**

Should be named according to the following pattern: LastFirstX.**, where Last is the student's last name, First is the student's first name, and X is the assignment number.

- For example, student John White would submit WhiteJohn3.cpp for programming assignment 3.

- **File Header**

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- The first lines of the submitted file should include a comment with the following information and format:

```
/**  
 * A short description of the program.  
 *  
 * @author Last Name, First Name  
 * @assignment CSCI515 Assignment X  
 * @date Date  
 */
```

- 6) All students are requested to access their university e-mail account regularly. You may be contacted when important matters arise. If you have any questions about the course or need assistance, please contact the instructor and/or the TA in person during office hours or by e-mail at any time.

GRADING

Letter grades for the course will be assigned according to this scale of the percentages given below.

A	90% -100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	59% or Below

Assessments

End-of-semester numeric scores will be weighted as follows.

- Assignments/Labs/Quizzes 40%
- Midterm Exam 30%
- Final Exam 30%

Notes:

- A. Assignments/Labs/Quizzes:

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Each week there would be an assignment, lab, and/or quiz that should be solved independently and tightly related to the class materials and topics. Submissions are always expected to be finished in a good shape by deadlines. All assignment must be formally submitted to the assignment folder. Email or any other formats of submissions do not count and will not be graded. If you have difficulty accessing D2L temporarily, you can email me your assignment as a proof of on-time submission. However, you still need to upload it to the assignment folder as soon the issue is resolved to receive credit.

Neither late assignments nor labs would be allowed without instructor's permission. The instructor should be prior notified with adequate verifiable documentation (e.g., medical letters or police reports). For the documentation, it will depend on the type of problems that you have experienced. The department and instructor reserve the right to check on the validity of the documents you submit and reject your requests/claims due to the lack of the evidence. Without any valid documentary evidence, a 10% per day late penalty would be applied to submissions including assignment, lab, or quiz. Submissions will NOT be accepted or even considered more than 4 days after the due date. If it is the case, a grade of zero will be awarded to the submission or missed work.

B. Attendance

For the face to face course, students are required to attend both lectures and labs for cooperative learning, active engagement, and effective communication. Attendance will be evaluated based on class participation while lab participations would be counted as part of lab grade.

For the online course, student should make effort to attend the live lecture if possible or listen to the recorded lecture. Students are required to keep up with class materials and announcement made during live lectures or via emails, including changes to due dates or assignments. Attendance will be evaluated based on the submission of assignments and labs.

C. Quizzes and Exams

You should do your own work on exams, assignments and labs. Copying another student's work is not acceptable. Any indication of cheating or plagiarism on an exam/assignment will result in an automatic 0 (zero) for the exam/assignment for all students involved. Yet, based on cheating and plagiarism activity in any section of

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class, instructor holds the right to give F grade to the identified student(s). Regarding codes in assignments, you may be required to explain the code you submitted. In case of discursive explanation, the instructor holds the right to lower your grade.

Quizzes and exams are graded based on the correctness of the answers. Quizzes are unannounced pop-up quizzes. The time of each quiz will be announced at the beginning of the class. There will be no make-ups for any missed in-class quizzes. All exams are comprehensive. The time and location of each exam will be announced one week before the exam. All students are expected to be present for exams. The instructor should be notified in advance in the event that students will be absent with adequate verifiable documentation (e.g., medical letters or police reports). Failure to do so may result in the student receiving zero for the missed exam.

D. Bonus credit

According to the quality, completion, and/or creativity of assignments, labs, and exams, students may be awarded bonus credit in some cases.

Additional notes:

You must earn an A on your own. Assume that you have completed all assignments, lower borderline grades may be affected positively or negatively by factors such as:

- the class grade distribution
- your class attendance, participation, and behavior (including what should be common courtesies: no sound-producing device use in class, arrive on time, stay until class is over, avoid distracting other students)

You need to give me a reason to think you deserve a grade higher than your percentage indicates and that you've made every effort to help yourself (you're attending class, are at least attempting programs, and participating in the current events discussions).

This is an online class. The D2L portal will be used for information and resource sharing. Assignments will be uploaded to D2L course shell. Students are responsible for obtaining and setting up their D2L account using their TAMUC student login. They need to follow the D2L course shell daily for the course announcements, downloading and uploading the assignments, and other course activities.

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TECHNOLOGY REQUIREMENTS

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A
Apple® Safari®	Latest	N/A

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Tablet and Mobile Support

Device	Operating System	Browser	Supported Browser Version(s)
Android™	Android 4.4+	Chrome	Latest
Apple	iOS®	Safari, Chrome	The current major version of iOS (the latest minor or point release of that major version) and the previous major version of iOS (the latest minor or point release of that major version). For example, as of June 7, 2017, D2L supports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version. Chrome: Latest version for the iOS browser.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
 - 512 MB of RAM, 1 GB or more preferred
 - Broadband connection required courses are heavily video intensive
 - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- You must have a:
 - Sound card, which is usually integrated into your desktop or laptop computer
 - Speakers or headphones.
 - *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site http://www.java.com/en/download/manual.jsp](http://www.java.com/en/download/manual.jsp)
- Current anti-virus software must be installed and kept up to date.

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Running the browser check will ensure your internet browser is supported.

Pop-ups are allowed.

JavaScript is enabled.

Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
 - [Adobe Reader](https://get.adobe.com/reader/) <https://get.adobe.com/reader/>
 - [Adobe Flash Player](https://get.adobe.com/flashplayer/) (version 17 or later) <https://get.adobe.com/flashplayer/>
 - [Adobe Shockwave Player](https://get.adobe.com/shockwave/) <https://get.adobe.com/shockwave/>
 - [Apple Quick Time](http://www.apple.com/quicktime/download/) <http://www.apple.com/quicktime/download/>
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

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You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

Student Support

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

System Maintenance

D2L runs monthly updates during the last week of the month, usually on Wednesday. The system should remain up during this time unless otherwise specified in an announcement. You may experience minimal impacts to performance and/or look and feel of the environment.

Interaction with Instructor Statement

Interaction with Instructor Statement: For general questions and assistance with the course, the instructor will keep a schedule of 6 regular office hours per week. If a student cannot meet during the designated schedule, arrangements can be made to meet at a more convenient time. An email should be sent to the instructor at least 24 hours prior to the time the student plans on meeting. Generally, I will reply to your e-mail messages in a timely manner. A reply can be expected within 24 hours.

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My responsibilities:

- 1) Make sure to accommodate all your learning needs
- 2) Try my best to answer your questions and resolve other related issues
- 3) Give feedback and your grade on assignments within one week of the due date.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Class Decorum Civility in the classroom or online course and respect for the opinions of other is very important in an academic environment. It is likely you may not agree with everything that is said or discussed in the classroom/online course. Courteous behavior and responses are expected. To create and preserve a learning environment that optimizes teaching and learning, all participants share a responsibility in creating a civil and non-disruptive forum. Students are expected to conduct themselves at all times in a manner that does not disrupt teaching or learning. Faculty have the authority to request students who exhibit inappropriate behavior to leave the class/online course and may refer serious offenses to the University Police Department and/or the Dean of Students for disciplinary action. (See Student Guidebook)

Academic Honesty

It is the policy of the University, the History Department, and the instructor that no form of plagiarism or cheating will be tolerated. Plagiarism is defined as the deliberate use of another's work and claiming it as one's own. This means ideas as well as text, whether paraphrased or presented verbatim (word-for-word). Cheating is defined as obtaining unauthorized assistance on any assignment. Collusion is defined as selling or purchasing academic products with the intention that they be submitted to fulfill an academic or course requirement. Proper citation of sources must always be utilized thoroughly and accurately. Cheating/plagiarism/collusion will result in a grade of "0" for the assignment, and may also result in failure of the course and/or disciplinary action by the University. Any student found guilty of violating academic integrity policy will fail the assignment in question, will automatically fail the course and will be subject to disciplinary action by the university (see Texas A&M University-Commerce Code of Student Conduct 5.b. [1,2,3]). Further information on the history department's plagiarism policy can be found on the department webpage. If you are unclear about what constitutes academic dishonesty, ask.

Writing Center

Students are encouraged to take advantage of the Writing Center's resources for assistance with drafting their written assignments. Although the center will not write your paper for you,

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it may help you to improve your writing skills. If you use the Writing Center, plan in advance because it can only help you if there is adequate time to incorporate their suggestions into your paper. Additionally, I am willing to read rough drafts (and even multiple drafts) of your written work so long as the drafts are submitted at least one week prior to the due date.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](#)

<http://www.albion.com/netiquette/corerules.html>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

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<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified

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law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:
<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Meets 01/11/2021- 05/01/2021

➤ **Tentative calendar**

Weeks	Topics	Assignment /Lab/Exam
Week 1	Introduction, comments, data types, cin, cout, operators and operator precedence	Warm-up Lab (Lab1)
Week 2	cin, cout, operators and operator precedence	Lab 2
Week 3	Relational operators, control structures: selection	
Week 4	Control structures: selection, control structures: repetition	Lab3
Week 5	Control structures: repetition	
Week 6	Input/output revisited, file input/output	Lab 4
Week 7	Functions: predefined functions, pass by value; Mid-term exam review	
Week 8	Functions: pass by reference; Midterm exam	N/A
Week 9	Spring break (no class)	
Week 10	Functions: scope, static variables, function overloading, default parameters	Lab 5

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Week 11	Arrays with different data types, index and access to arrays	
Week 12	Arrays with different data types, index and access to arrays	Lab 6
Week 13	Array operations, C-strings (char arrays), multi-dimensional arrays	
Week 14	Application of arrays: searching and sorting, Final exam review	N/A
Week 15	Records (struct): memory status of structs, arrays in structs, functions with structs, structs in structs; Pointers and Classes. Final Exam	

Note: The right to modify the presentation order of materials is reserved. Course progress will be based on feedback and suggestion from students. We would cover the course materials, so if we slow in some topics, we must accelerate elsewhere.

HAVE A HAPPY AND SUCCESSFUL SEMESTER

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