Course Syllabus

Instructors	**Mike McCarthy** mm6+@andrew.cmu.edu Office: HBH 3015 Phone: (412) 268-4657 Office Hours: Tuesday and Thursday 1:00-3:00 PM HBH 3015 Home Page	**Marty Barrett** martinba@cmu.edu Office: HBH 3040 Phone: (412) 268-3567 Office Hours: 11:00-12:20 MW 2:00 – 3:20 TTh

Lectures	Section A: Mondays 2:00-3:30 Section B: Mondays 3:30-4:50 Labs for each section are held on Wednesday during these same times. You will be assigned a subsection (1, 2, etc.) within your lab time. See below for details.
Lecture Recordings	Lectures will **not** be recorded. Per University guidelines, "Students are expected to attend courses in-person unless they are instructed to isolate due to their own positive COVID-19 status."
Grading Scale	97.5 - 100 A+ 92.5 - 97.4 A 90.0 - 92.4 A- 87.5 - 89.9 B+ 82.5 - 87.4 B 80.0 - 82.4 B- 77.5 - 79.9 C+ 72.5 - 77.4 C 70.0 - 72.4 C- 00.0 - 69.9 R
Assignment Weights	• 8% - Pre-class quizzes (12 quizzes, 0.8% each, **drop the lowest 2**) • 2% - Unannounced quizzes (3 quizzes) • 30% - Projects (5 projects, 6% each) • 10% - Labs (11 labs, **drop the lowest one**, 1% each, of which 0.25% checkpoint, 0.75% completion) • 30% - Midterms (2 midterms, 15% each) • 20% - Final exam
Project Assignments and Late Assignments	• You have 7 *grace* days you can use to turn in projects late with no penalty. Grace days may ***only*** be used for projects. • This policy is meant to cover such issues as minor illness, job interviews, travel, and so on. • Any portion of a day late (e.g. 1 second) counts as one grace day used. • TAs will keep track of your late days, and after 7, a penalty of 10% per day late will be applied. • You should not contact the instructors nor TAs when you use your one late allowance; it will be automatically applied. • **A second late is late.** Plan ahead so that you are not trying to submit with 10 seconds to go, and find that the Canvas server clock is 11 seconds ahead of your laptop clock.
Labs	• Each student must be registered for and regularly attend a lab.

- Labs are primarily hands-on activities, where assistance from fellow students and a TA is available.
- You are allowed to help other students and get help from other students on labs (and labs only).
- For attending your registered lab and making it to the defined *checkpoint* before the end of the lab session you receive 0.25%.
- Lab attendance and checkpoint may be verified only by the TA running your assigned lab session.
- When completing the lab before the due date (typically the following Monday a 2:00pm) you receive 0.75%.
- Completed lab work may be shown to any DS TA during his or her office hours.
- There will be questions on the exams that test for having completed and understood the labs.
- Late labs receive **zero** credit. There are no exceptions to this policy. The lowest lab grade is automatically dropped from the final grade.

Weekly Quizzes

For each lecture, there will be **pre-class material to read or watch** and a **pre-class quiz.** This short quiz will be available *only* from 2:00pm Friday until 2:00pm Monday Pittsburgh time. No credit will be given for the quiz outside this timeframe. There will be 12 quizzes, and the two lowest-scored quizzes will be dropped and 10 will be counted in your final grade.

Policy on collaboration and cheating

Collaboration is permitted in Labs but not on any other assignments. Copying code without citing it is cheating. Copying code from a fellow student is cheating.

You may choose to use a large language model to assist with your programming work, unless it is otherwise prohibited – please read the directions carefully. Note that LLMs often make mistakes. You are responsible for any errors or problems that may be present in the code that you submit. The closed book exams are designed to test your knowledge and coding skills. So, if you do use a large language model, be sure to master the material and truly understand the code before taking an exam.

However, your responsibilities as a student remain the same. **You must follow the academic integrity guidelines of the university and of this class**. If you use one of these generative AI tools to develop content for an assignment, you are required to cite the tool's contribution to your work, just as you should cite code acquired from any other source.

If you copy code from the Web, be sure to provide a comment in the code with the exact URL where the code was copied from. In practice, cutting and pasting content from any source without citation is plagiarism. Likewise, paraphrasing content from a generative AI without citation is plagiarism. Similarly, using any generative AI tool without appropriate acknowledgement will be treated as plagiarism. The university's policy on plagiarism applies to all uncited or improperly cited use of work, whether that work is created by human beings

alone or in collaboration with a generative AI. Provide as a comment in the code the exact URL where the code was copied from.

Code that is provided by the instructors is allowed as long as the code is clearly cited as being provided by the instructors. Of course, if you have violated the spirit of the project, you will earn zero points.

In addition to any penalties imposed by the instructor, all cheating and plagiarism infractions will be reported in writing to the Associate Dean for the program, the Associate Dean of Faculty, the Dean of Student Affairs, and the Dean. They will review and determine if expulsion should be recommended. The report will become part of the student's record.

The appropriate people to refer to for help in homework projects are the TAs and the instructors. They can look at your code and help you with it. See them during office hours.

Given that:
- There are very many students in 95-702, so dealing with lots of individual email doesn't scale.
- Other students often have the same questions you do
- There are TA and instructor office hours

Regarding Class Absences:
- Don't send us email, we don't need to know.
- You are responsible for the content.
- Come to office hours if you have questions.

Regarding Questions about Class Topics:
- Ask in class. !!!
- Use Piazza to post your question.
- Come to office hours if you have followup questions.

Regarding Homework Project Questions:
- Ask in class. !!!
- Use Piazza to post questions
- Go to TA office hours.
- Go to faculty office hours if the TAs have not been able to help.

Communication Guidelines

Regarding Late Homework Project Submission:
- Read the policy on late submissions
  - With so many students, they cannot change.
- Do not email instructors nor TAs that your project will be late.
- If your assignment is late (even one minute late) the TAs will apply the late allowance. Future late assignments will lose 10% per any part of a day.
- Plan ahead.

Regarding What is On the Final Exam:
- Assume anything discussed in class or in lab or assigned as readings might be on the final exam.
- Ask specific questions about this material in class.
- Come to faculty office hours if you have specific questions
- Don't ask "What is on the final exam?"
- Don't ask "Will X be on the final exam?"

Regarding Grading Complaints:

- See "Policy on complaints about grading" below

If you have a serious personal problem that impacts your ability to proceed normally thorough the course, please don't hesitate to email or see the instructors. Those we certainly do want to hear about and are happy to help you with!

We hope and intend that the TAs will provide you with valuable assistance.

- TAs should:
    - Be present for lab sessions and office hours.
    - Mark when you have achieved the lab checkpoint, and the complete lab.
    - Be helping students during labs and office hours, not doing their own work.
    - Help you understand the project assignments and class topics
    - Help you with general questions concerning your project assignment code.
    - Help you go over what your code should or should not be doing.
    - Grade your projects within two weeks of submission

Role of TAs

- TAs should not:
    - Find your code bugs.
    - Fix your code for you.
    - Show you their version of the code.
- TAs are also very busy students, and cannot reply to your questions by email, chat, phone, Facebook, Twitter, SMS, smoke signal, or telepathy.
    - Except if they invite you to contact them.
    - Don't abuse the offer.
- If you have complements or problems with the TAs assistance:
    - The instructors **definitely** want to know about it.
    - Please tell us about it before or after class, or during office hours.
    - Please do not send it in email, unless instructed by us.

Conflicts with the Final Exam

- Exams take precedence over job interviews and trips.
- No allowances or rescheduling will be given for missing the final exam because of a job interview, job trip, marriage, or good air fares.

- TAs need to make distinctions between excellent, good, and bad work.
- Grading mistakes may occur.
- Please contact the TA who graded your assignment about grading mistakes.
- It will be up to the TA to handle the complaint.

Policy on complaints about grading

- If you are still not satisfied with the TA's grade please contact your instructor.
- Our initial reaction will be to support the TA's grade.
- In some cases, however, we might agree with the student and ask for the grade to be adjusted.
- Please make any grading concerns known to the TA immediately (within 1 week).
- Set up an appointment with the TA and get the matter resolved.

Project Grading	- A TA will normally be assigned to grade the projects. - Given the number of students in the course, we will sometimes use the common practice of selecting some sections of a code or project reflections and grading that carefully and assigning the assignment grade based on that segment(s).
Required Textbook	Distributed Systems Concepts and Design Coulouris, Dollimore and Kindberg Fifth Edition ISBN-10: 0132143011 ISBN-13: 978-0132143011
Learning Objectives	- Describe the non-functional characteristics of distributed applications and differentiate between different types of middleware systems. - Design, implement, and deploy distributed systems using the prevalent models of web applications, web services, remote objects, and asynchronous messaging. - Understand the function and interplay of network protocols from ARP to application protocols that enable distributed systems on the Internet. - Demonstrate the technical ability to code solutions with core networking protocols. - Program solutions to run on all ranges of devices, including mobile, desktop, and cloud-based servers. - Understand the Network File System (NFS), the Andrew File System (AFS), and the Hadoop Distributed File System (HDFS) - Understand the challenge of time in a distributed system, and implement a means of assessing a distributed system's state. - Understand transactions and implement a two phase commit protocol. - Describe the difference and similarities between symmetric key and asymmetric key cryptography. - Describe the reasoning behind each step of several cryptographic protocols including variations on Kerberos and SSL. - Demonstrate deploying containers to cloud infrastructure - Understand the problem of distributed consensus and design solutions
Accommodations	If you have a disability and have an accommodations letter from the Disability Resources office, we encourage you to discuss your accommodations and needs with either instructor as early in the semester as possible. We will work with you to ensure that accommodations are provided as appropriate. If you suspect that you may have a disability and would benefit from accommodations but are not yet registered with the Office of Disability Resources, we encourage you to contact them at access@andrew.cmu.edu.
Research to Improve the Course	For this course, we are conducting educational research. This research will involve analyzing your coursework. You will not be asked to do anything above and beyond the normal learning activities and assignments that are part of this course. You are free not to participate in this research, and your participation will have no influence on your grade for this course or your academic career at CMU. If you do not wish your course work to be used as research data or if you are under 18 years of age, please send an email to Chad Hershock (hershock@andrew.cmu.edu), and then your course data will not be included.

You will still be required to complete any activities assigned by the instructor as part of the learning experience, but your data will not be analyzed for research purposes.

If you are asked to do something above and beyond the normal learning activities of the course, you will be first presented with an informed consent form. Such requests might include participation in certain types of surveys, focus groups, or other activities and you may choose to participate or not in the offered research activities.

Participants will not receive any compensation. The data collected as part of this research will include student grades. Data analysis of coursework will be conducted after the course is over and final grades are submitted. The Eberly Center may provide support on this research project regarding data analysis and interpretation. The Eberly Center for Teaching Excellence & Educational Innovation is located on the CMU-Pittsburgh Campus and its mission is to support the professional development of all CMU instructors regarding teaching and learning. To minimize the risk of breach of confidentiality, the Eberly Center will never have access to data from this course containing your personal identifiers. All data will be analyzed in de-identified form and presented in the aggregate, without any personal identifiers. If you have questions pertaining to your rights as a research participant, or to report concerns to this study, please contact Chad Hershock (hershock@andrew.cmu.edu).

| A Diverse, Equitable, and Inclusive Course Community | We must treat every individual with respect.
We are diverse in many ways, and this diversity is fundamental to building and maintaining an equitable and inclusive campus community. Diversity can refer to multiple ways that we identify ourselves, including but not limited to race, color, national origin, language, sex, disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. Each of these diverse identities, along with many others not mentioned here, shape the perspectives our students, faculty, and staff bring to our campus. We, at CMU, will work to promote diversity, equity and inclusion not only because diversity fuels excellence and innovation, but because we want to pursue justice. We acknowledge our imperfections while we also fully commit to the work, inside and outside of our classrooms, of building and sustaining a campus community that increasingly embraces these core values.
Each of us is responsible for creating a safer, more inclusive environment. Unfortunately, incidents of bias or discrimination do occur, whether intentional or unintentional. They contribute to creating an unwelcoming environment for individuals and groups at the university. Therefore, the university encourages anyone who experiences or observes unfair or hostile treatment on the basis of identity to speak out for justice and support, within the moment of the incident or after the incident has passed. Anyone can share these experiences using the following resources:
• Center for Student Diversity and Inclusion: csdi@andrew.cmu.edu, (412) 268-2150 |

- Report-It online anonymous reporting platform: www.reportit.net username: tartans password: plaid

All reports will be documented and deliberated to determine if there should be any following actions. Regardless of incident type, the university will use all shared experiences to transform our campus climate to be more equitable and just.

Take care of yourself

Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding recreational drugs and excessive alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Ask for support sooner rather than waiting.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is available to help: visit their website or call 412-268-2922. Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.

If you or someone you know is feeling suicidal or in danger of self-harm, call someone immediately, day or night:

CaPS: 412-268-2922

Re:solve Crisis Network: 888-796-8226

If the situation is life threatening, call the police:

On campus: CMU Police: 412-268-2323

Off campus: 911