CONCORDIA COLLEGE

OFFUTT SCHOOL of BUSINESS

# CSC 345: Computer Networks
# Fall 2018

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|---|---|
| **Day and Time:**<br>Tuesday/Thursday 8:00am – 9:15am<br><br>**Room:**<br>Grant Center (GC) 117 | **Instructor:** Damian Lampl<br>**Office:** GC 219<br>**Phone:** 218-299-3376<br>**Email:** dlampl@cord.edu<br>**Office Hours:** M/W 10:30am-12pm – Grant Center 219,<br>Friday 1:00pm -2:30pm – Knutson Atrium,<br>or by appointment |

| Textbooks & Online Resources | Author | Publisher | ISBN 10 | ISBN 13 |
|---|---|---|---|---|
| CompTIA Network+ Guide to Networks, Cengage MindTap online system | West, Dean, Andrews | Cengage | 1337756520 | 978-1337756525 |

## Course Description

This course provides an introduction to the fundamental concepts in the design and implementation of computer communications networks. Topics include network topologies and applications, data link protocols, local area networks, routing, and high-speed networks.

## Prerequisite

CSC 225 or equivalent

## Course Objectives

This course is intended to familiarize students with core computer networking concepts. By the end of the course, students will be able to:

- Understand networking protocol basics
- Effectively utilize networking tools and software

## Offutt School of Business Pillars

The Offutt School of Business believes in, and is committed to integrating four critical perspectives across its curriculum: Leadership Development, Ethical Decision-Making, Entrepreneurial Perspective, and Global Perspective.

**Leadership Development** – This course will require students to work together in small groups during most class periods and on relatively significant final projects. Through these peer interactions, students will learn and hone important leadership abilities including, but not limited to: task delegation, peer reviews, public speaking, conflict resolution, and group project organization. Each student will also be required to assume the role of project lead during at least one group project milestone deliverable, ensuring all students experience the responsibilities of team leadership.

**Ethical Decision-Making** – Students are encouraged to work together at solving problems while maintaining individual integrity. Quizzes are an independent activity in which all available materials are allowed to complete the work, including the book, notes, presentation slides, source code from class, and internet search. These collaborative opportunities might tempt students to copy each others' work, or the work of others without citation. Students enrolled at Concordia College are expected to be of outstanding ethical character and must always ***choose to do things the right way***. Students must also consider data privacy practices as well as user administration privileges and responsibilities among other ethical coding practices.

**Entrepreneurial Mindset** – Upon completing this course, students will be equipped with enough knowledge to write their own software and are

encouraged to implement their ideas for open source and commercialized software solutions, as well as seek out opportunities to work with community-based organizations and provide a valuable, profitable service.

**Global Perspective** – Software is ubiquitous in today's technology-driven world. Along with the internet, humans are more globally connected now than at any previous time in history. This brings together people from cultures all across the globe, each with its own rich history, along with the complex views of the individuals stemming from those cultures. Computer science focuses on and embraces the similarities all humans share with each other, while recognizing and respecting the differences that make us all unique. Students must consider the international reach of their work, and the impact of globally accessible software.

## Academic Integrity Code

By attending Concordia College, students are demonstrating their commitment to the Academic Integrity Code of the college. The code reminds students of their responsibility to promote honesty by opposing any form of cheating or plagiarism. Please review Concordia College academic integrity policies found at:

http://www.cord.edu/Studentlife/StudentHandbook/AcademicPolicies/academicintegrity.php

In addition to any Concordia College consequences, documented cases of cheating or plagiarism will result in the exam or assignment being given a score of zero (0) with no opportunity to retake the exam or resubmit the assignment. If a pattern of cheating or plagiarism is found, a grade of "F" will be assigned for the course.

## Diversity Statement

Concordia College aspires to be a diverse community that affirms an abundance of identities, experiences, and perspectives in order to imagine, examine, and implement possibilities for individual and communal thriving. Critical thinking grounded in the liberal arts compels us to participate in intentional dialogue, careful self-reflection, and honest interactions about difference, power, and inequity. As responsible engagement in the world calls us to recognize worlds that are familiar or unfamiliar, visible or less visible, Concordia will act to increase and support diversity in all areas of college life.

## Accommodations for Students with Disabilities

In accordance with the Americans with Disabilities Act, Concordia College and your instructor are committed to making reasonable accommodations to assist individuals with documented disabilities to reach their academic potential. Such disabilities include, but are not limited to, learning or psychological disabilities, or impairments to health, hearing, sight, or mobility. If you believe you require accommodations for a disability that may impact your performance in this course, you must schedule an appointment with Disability Services to determine eligibility. Students are then responsible for giving instructors a letter from Disability Services indicating the type of accommodation to be provided; please note that accommodations will not be retroactive. The Disability Services office is in Academy 106, phone 218-299-3514; website:

https://www.concordiacollege.edu/directories/offices-services/counseling-center-and-disability-services/

## Accommodations for Co-Curricular Activities

Concordia students should not be penalized for missing classes due to participation in a co-curricular activity. Students should be allowed to take all exams/quizzes or complete other graded activities as possible. If class attendance is a factor in determining the final grade, the students should not be penalized for missing these classes. If class participation is a factor in determining the final grade, faculty should allow students to fulfill the participation requirement by some other means or at some other time. Faculty will determine what kind of make-up work is required for absences, and whether the work is to be completed before the students' departure or upon their return.

## Course Requirements and Expectations

Prior experience with computer networks or networking software is not required. Class sessions will be a mixture of lecture and hands-on lab tutorials.

### Labs (20%)

Most class sessions will be split into a lecture portion to introduce the day's material, followed by small group activities centered around the material. Lab participation is expected and will account for 20% of the final grade.

## Assignments (30%)

After learning the material from a given chapter, students will demonstrate proficiency by completing an assignment. Assignments are worth a total of 30% of the final grade.

## Quizzes (25%)

Each chapter will be summarized by an assessment quiz. A short review will precede the quiz and all materials utilized during the course will be available for use during the quiz. Quizzes account for a total of 25% of the final grade.

## Final Project (25%)

Each chapter will be summarized by an assessment quiz. A short review will precede the quiz and all materials utilized during the course will be available for use during the quiz. Quizzes account for a total of 25% of the final grade.

### Group Project Contract

Participation is vital to group project success and all students are expected to contribute to the final project. Every group member will sign a final project contract to be held accountable to the other students in their group. Conflict and disagreement will naturally occur in any project and is to be expected; however, if a student demonstrates a pattern of not contributing to the final project, the other group members may vote to remove that student from the group, subject to review by the instructor. All work delegated to the removed student must be distributed to the remaining group members and the student removed from the group must complete a final project on their own.

Each student will use a rubric to evaluate all of their final project group members and this evaluation will affect students' final scores.

### Group Project Summary Report

A postmortem report of the group programming project will be included in the group project assessment. The report is to be completed individually by each student and submitted with the final project.

## Late Work and Rescheduling

Late assignments may be submitted any time after the due date, but will be assessed a flat 10% penalty. Quizzes must be completed during the scheduled time and may only be rescheduled with prior notice and valid reason for absence via email.

## Grading

| Percentage | Grade |
|---|---|
| 93-100 % | A |
| 90-92.9% | A- |
| 87-89.9% | B+ |
| 83 - 86.9% | B |

| Percentage | Grade |
|---|---|
| 80-82.9% | B- |
| 77-79.9% | C+ |
| 73 - 76.9% | C |
| 70-72.9% | C- |

| Percentage | Grade |
|---|---|
| 67-69.9% | D+ |
| 63 - 66.9% | D |
| 60-62.9% | D- |
| Less than 60% | F |

| Breakdown | % |
|---|---|
| Labs | 20% |
| Assignments | 30% |
| Quizzes | 25% |
| Final Project | 25% |

## Tentative Schedule

# AUGUST 2018

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY | DELIVERABLES |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 | |
| 27 | 28 | 29 | 30 Introduction | 31 | | | |
| | | NOTES: | | | | | |

# SEPTEMBER 2018

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY | DELIVERABLES |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | |
| 3 | 4<br>CH.1 - Introduction to Networking | 5 | 6<br>CH.1 - Introduction to Networking | 7 | 8 | 9 | - Sept.6: Group Milestone 1 - DUE |
| 10 | 11<br>CH.2 - How Computers Find Each Other on Networks | 12 | 13<br>CH.2 - How Computers Find Each Other on Networks | 14 | 15 | 16 | |
| 17 | 18<br>CH.2 - How Computers Find Each Other on Networks | 19 | 20<br>Guest Speaker | 21 | 22 | 23 | - Sept.20: Group Milestone 2 - DUE |
| 24 | 25<br>CH.3 - How Data is Transported Over Networks | 26 | 27<br>CH.3 - How Data is Transported Over Networks | 28 | 29 | 30 | |
| | | NOTES: | | | | | |

# OCTOBER 2018

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY | DELIVERABLES |
|---|---|---|---|---|---|---|---|
| 1 | 2<br>CH.4 - Structured Cabling and Networking Elements | 3 | 4<br>Concordia Servers Tour | 5 | 6 | 7 | |
| 8 | 9<br>CH.4 - Structured Cabling and Networking Elements | 10 | 11<br>CH.5 - Network Cabling | 12 | 13 | 14 | - Oct.9: Group Milestone 3 - DUE |
| 15 | 16<br>CH.5 - Network Cabling | 17 | 18<br>CH.5 - Network Cabling | 19 | 20 | 21 | - Oct.18: Group Milestone 4 - DUE |
| 22 | 23<br>**NO CLASS - Fall Interim** | 24 | 25<br>**NO CLASS - Fall Interim** | 26 | 27 | 28 | |
| 29 | 30<br>CH.6 - Wireless Networking | 31 | | | | | |
| | | NOTES: | | | | | |

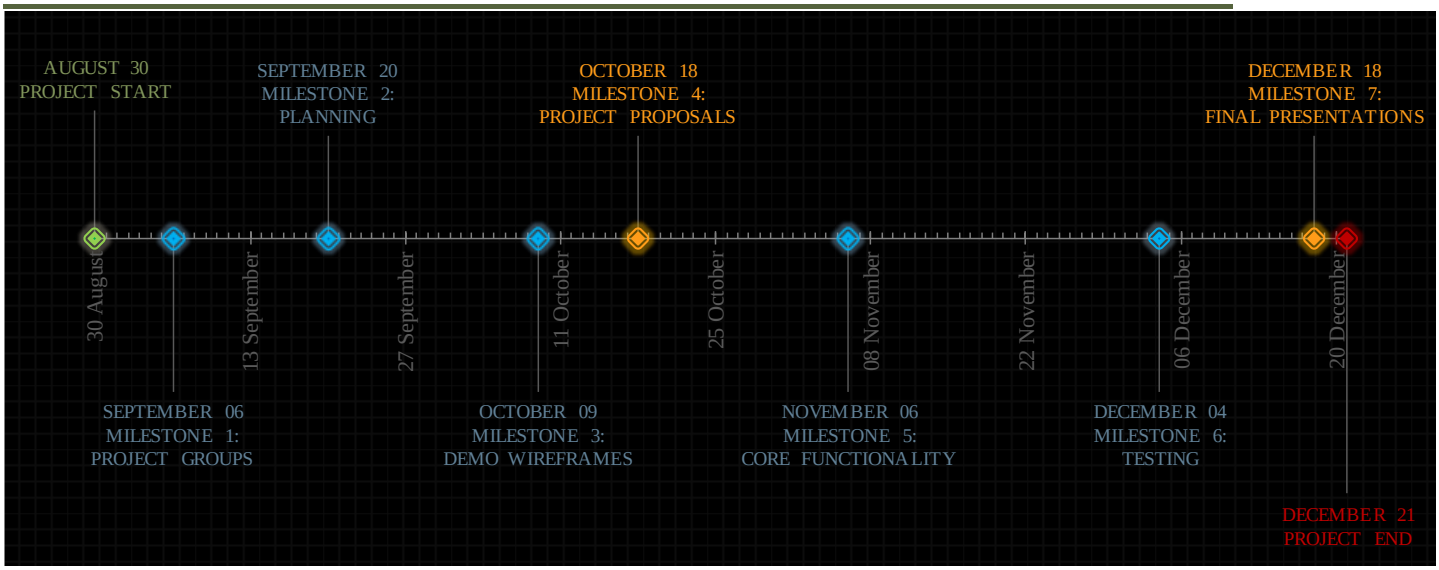
# NOVEMBER 2018

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY | DELIVERABLES |
|---|---|---|---|---|---|---|---|
| | | | 1<br>CH.6 - Wireless Networking | 2 | 3 | 4 | - Nov.1: Assignment 2 - Start |
| 5 | 6<br>CH.7 - Cloud Computing and Remote Access | 7 | 8<br>CH.7 - Cloud Computing and Remote Access | 9 | 10 | 11 | - Nov.6: Group Milestone 5 - DUE |
| 12 | 13<br>CH.8 - Network Risk Management | 14 | 15<br>CH.8 - Network Risk Management | 16 | 17 | 18 | |
| 19 | 20<br>CH.9 - Unified Communications and Network Performance Management | 21 | 22<br>**NO CLASS - Thanksgiving** | 23 | 24 | 25 | |
| 26 | 27<br>CH.10 - Network Segmentation and Virtualization | 28 | 29<br>CH.10 - Network Segmentation and Virtualization | 30 | | | |
| | | NOTES: | | | | | |

# DECEMBER 2018

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY | DELIVERABLES |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | |
| 3 | 4<br>CH.11 - Wide Area Networks | 5 | 6<br>CH.11 - Wide Area Networks | 7 | 8 | 9 | - Dec.4: Group Milestone 6 - DUE |
| 10 | 11<br>CH.12 - Industrial and Enterprise Networking | 12 | 13<br>CH.12 - Industrial and Enterprise Networking | 14 | 15 | 16 | |
| 17<br>FINAL EXAMS | 18<br>**FINAL: 2PM-4PM** | 19<br>FINAL EXAMS | 20 | 21 | 22 | 23 | - Dec.18: FINAL GROUP PRESENTATIONS 2pm-4pm |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| 31 | | NOTES: | | | | | |

# CSC 225 FINAL PROJECT TIMELINE




## PROJECT DETAILS

| DATE | MILESTONE | NOTES |
|---|---|---|
| August 30 | Project Start | |
| September 06 | Milestone 1:<br>Project Groups | Determine group members. |
| September 20 | Milestone 2:<br>Planning | Choose project type, plan main screens, components, and functionality; draw diagrams, mock screenshots, etc. |
| October 09 | Milestone 3:<br>Demo Wireframes | Dummy pages/images; allow click-through of application's main functionality to give users an idea of what to expect. |
| October 18 | Milestone 4:<br>Project Proposals | Present a working demo of the application at its current stage of development. |
| November 06 | Milestone 5:<br>Core Functionality | Application should be in a working state with some core functionality implemented and usable. |
| December 04 | Milestone 6:<br>Testing | Application should be close to being fully functional and at a point where testing can be completed. |
| December 18 | Milestone 7:<br>Final Presentations | Present the final project. |
| December 21 | Project End | DONE |