

Special Topics in CIS: Multimedia Networking Principles

CIS4930 Section: 29EH

Class Periods: M,W,F | Period 6 (12:50 PM - 1:40 PM)

Location: ***Online*** (until the pandemic is over)

Academic Term: Fall 2020

Instructor:

Name: Jonathan Kavalan, PhD

Email Address: jcliu@cise.ufl.edu (preferred)

Office Phone Number: (352)294-6655

Office Hours: M,W,F | (11:00 AM - 12:00 PM)

Teaching Assistants:

Please contact through the Canvas website

- To be determined

Course Description

This course covers design and analysis of multimedia networking. Major effort is devoted on multimedia elements, and their impact on higher-level protocols at the application- and transport-layer

Course Pre-Requisites / Co-Requisites

CNT 4007 (Computer Network Fundamentals)

Course Objectives

Students will be able to accomplish the following objectives by the end of the course:

- (1) understand different data elements, which include text, graphics, audio, video and combinations,
- (2) understand the principles of audio and visual communication via streaming over networks,
- (3) design and analysis of streaming protocols including performance measurement and enhancement.

Materials and Supply Fees

N/A

Suggested Textbooks

- (A) "Multimedia Fundamentals: Media Coding and Content Processing" by R. Steinmetz and K. Nahrstedt, Vol. 1, Latest Edition, Practice Hall.
- (B) "Computer Networking: A Top-Down Approach Featuring the Internet", by J. Kurose and K. Ross, 5th/6th/7th Edition, Addison Wesley.
- (C) Lecture notes and research papers provided by the instructor.

Recommended Materials

- N/A

Course Schedule

Week 1: Introduction

Week 2: Audio & Speech

Week 3: Graphic & Images

Week 4: JPEG Compression

Week 5: MPEG-X Series

Week 6-7: Refresher on networking protocols

Week 8: Streaming

Week 9-10: Quality of Service

Week 11-14: Scalability Issues

Week 15: Design Integration

Attendance Policy, Class Expectations, and Make-Up Policy

Regular attendance is encouraged but not required, since lecture slides will be posted afterwards via the CANVAS e-learning system.

Excused absences must be consistent with university policies and require appropriate documentation. Additional information can be found here: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Cell phone is required to be in the silent mode, and students are encouraged to use laptop computer for taking lecture notes only.

All assignments, projects and exams will be due according to the published deadlines. No late assignments, projects and exams are accepted unless the excused absences are documented and reported according to the above university policies. Note the submission deadlines are firm and enforced by the system clock within the CANVAS system.

Evaluation of Grades

<i>Assignments</i>	<i>Total Points</i>	<i>Percentage of Final Grade</i>
Homeworks (3-4)	100 each	20%
Programming Projects (3-4)	100 each	40%
Midterm Exams (2)	100 each	40%
		100%

Grading Policy

<i>Percent</i>	<i>Grade</i>	<i>Grade Points</i>
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 - 83.9	B	3.00
78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33
72.0 - 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://gatorevals.aa.ufl.edu/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://gatorevals.aa.ufl.edu/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded.

If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Campus Resources:

Health and Wellness

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), [or http://www.police.ufl.edu/](http://www.police.ufl.edu/).

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.