

## **Computer Communications**

EEL4598 Section#: CAMP

EEL5718 Sections: CAMP and EDGE: 1FE2, 2FED

**Class Periods:** Tuesday, Period 4, Thursday, Periods 4-5

**Location:** 100% Online

**Academic Term:** Summer 2020

### **Instructor:**

Name: Dr. Janise McNair

Email Address: [mcnair@ece.ufl.edu](mailto:mcnair@ece.ufl.edu) (After summer classes begin, please use Canvas mail tool.)

Office Phone Number: 352-392-2629

Office Hours: Mondays 1-3pm

### **Teaching Assistant/Peer Mentor/Supervised Teaching Student:**

Please contact through the Canvas mail tool or Piazza

- TBD

### **Course Description**

This course introduces the principles and practice of computer networking, emphasizing data communication and the lower layers of the OSI and TCP/IP protocol architectures. (3 credits)

### **Course Pre-Requisites / Co-Requisites**

EEL5718: Communication Systems and Components or equivalent and graduate level standing.

EEL4598: EEL 3834 or COP 2271 or equivalent and junior standing or higher

### **Course Objectives**

Computer and communications networks are the key infrastructures of today's information society. They contribute to the correct operations of many critical services (from healthcare to finance to transportation to power to entertainment). A computer communication network is a set of equipment, facilities, architectures and protocols that enable the transfer of information between two or more chips, devices, machines and/or users.

In this course, students will learn about the basic operation and design of a computer communications system. The students will apply their knowledge of advanced mathematics, basic programming and communications to understand and evaluate the performance of modern and next generation computer communication networks.

These objectives will be accomplished through:

1. Examining the operation of telecommunication networks for services such as voice, data, image, and video transport.
2. Designing and conducting experiments using professional computer engineering industry tools
3. Applying mathematics (including probability and statistics, discrete math) and engineering to evaluate performance and compare networked systems
4. Developing techniques and skills necessary for applying computer communications in practice.

### **Materials and Supply Fees**

None

### **EEL4598 - Professional Component (ABET):**

This course consists of 3 credits of Engineering Science

### **Required Textbooks and Software**

- Textbook material will be provided through the Marsten Science Library and through professional journals published by IEEE and ACM.

### **Recommended Materials (not required)**

- A. Leon-Garcia and I. Widjaja, Communication Networks, 2003, 2<sup>nd</sup> edition, McGraw-Hill
- ISBN number: *ISBN-10*: 007246352X, *ISBN-13*: 978-007246352

**Course Title, Prefix, and Number**

**Course Instructor and Academic Term**

## **Course Schedule**

Week 1: Introduction and Overview; Layered Model and Topology

Week 2: Packet Switching and Routing

Week 3: Shortest Path Routing Algorithms

Week 4: IP Packets and Addressing

Week 5: TCP

Week 6: Review / Exam 1 (in-class exam)

Week 7: **Summer Break-1**

Week 8: **Summer Break-2**

Week 9: Local Area Networks

Week 10: Line Coding and Error Control

Week 11: Gigabit Ethernet

Week 12: Wireless Ethernet

Week 13: Smart Grid Networks

Week 14: Project Demonstrations

It is expected that project groups will give demonstrations on Zoom and post demonstrations on youtube.com during the summer. Schedule to be determined.

## **Attendance Policy, Class Expectations, and Make-Up Policy**

### **Course Policies**

- **Assignment Submission.**
  - Electronic submission of homework and project assignments are required.
  - Upload to the course e-learning site in one of the following formats: PDF (preferred), MS Word, or Text
  - Demonstrations will be performed live on Zoom or posted on youtube.com
- **Access to a computer programming or simulation tool is required.**
  - Homework, quizzes and assignments may be use e-learning tools.
  - Open source software will be used for simulator/emulator assignments.
  - Honorlock will be used for exams.
- **Regular Participation is Expected:**
  - Weekly assignments will be used to account for “attendance”.
  - It is the student's responsibility to check e-learning regularly and to post questions (in Piazza or Canvas)
  - Excused absences must be consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require documentation.
- **Deadlines:**
  - There will be no make-ups for homework or in-class assignments. Late homework may be accepted before solutions are posted, but a 10% penalty per day may be applied.
  - There will be no make-up exams except for excused absences (as determined by the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require documentation.
- **Individual Effort**
  - All assignments are assumed to be an individual effort unless otherwise specified by the instructor.
- **Announcements and updates**
  - Set e-learning to send announcements to your gatorlink email. You will need to check it regularly.
- **Class participation**
  - The class participation grade is assigned to each student to reflect attendance at student presentations, project group participation, and discussion participation, as well as deductions for disruptive behavior.

### **EDGE Students (This list applies only to those registered in an EDGE section)**

- **EDGE Deadline Extensions.** EDGE students will have a one-week automatic extension for all deadlines, except for those that go past the end date of the summer semester. Extensions for more than one week require prior approval by instructor.
- **EDGE Exams.** Honorlock or Proctor U.

- **Work Computers:** Contact your IT department about having administrative permissions to share your desktop during exams. If you cannot do this, you will need to be able to use your own computer.
- **Honorlock Guidelines:** <https://dce.ufl.edu/media/dceufledu/pdfs/Honorlock-Student-Exam-Preparation-Information.pdf>
- **How ProctorU Works:** See “How to Take an Exam with Proctor U” from the BioStatistics Department: <http://biostat.ufl.edu/resources/e-learning-resources/how-to/how-to-take-an-exam-with-proctoru/>

### **Evaluation of Grades**

<b>Assignment</b>	<b>Total Points</b>	<b>Percentage of Final Grade</b>
Homework Sets/Quizzes (5)	100 each	15%
Tutorials/Labs	100 each	15%
Status Reports	100 each	10%
Midterm Exam	100	30%
Project	100	30%
<b>Total</b>		<b>100%</b>

### **Grading Policy**

<b>Percent</b>	<b>Grade</b>	<b>Grade Points</b>
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	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 requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### **Course Evaluation**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

### **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://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-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.

### ***Commitment to a Safe and Inclusive Learning Environment***

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, [rbielling@eng.ufl.edu](mailto:rbielling@eng.ufl.edu)
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, [taylor@eng.ufl.edu](mailto:taylor@eng.ufl.edu)
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, [nishida@eng.ufl.edu](mailto:nishida@eng.ufl.edu)

### ***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: <https://registrar.ufl.edu/ferpa.html>

### ***Campus Resources:***

#### ***Health and Wellness***

##### **U Matter, We Care:**

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**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 Discrimination, Harassment, Assault, or Violence**

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, [title-ix@ufl.edu](mailto:title-ix@ufl.edu)

**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/>.

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://care.dso.ufl.edu>

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