

Wireless Ad Hoc Networks

EEL 6588 Section 4E45

Class Periods: M,W,F | Period 4 (10:40 AM - 11:30 AM)

Location: BLK 0415

Academic Term: Fall 2019

Instructor:

- Name: Janise McNair
- Email Address: mcnair@ece.ufl.edu (After class begins, please contact through Canvas mail tool.)
- Office Phone Number: 352-392-2629
- Office Hours: M,W 1130am-1pm

Teaching Assistants:

Please contact through the Canvas website

- TBD

Course Description

Advanced research-oriented course covering various topics relevant to a cutting-edge technology, namely wireless ad hoc networks, mobile ad hoc networks, wireless sensor networks, and/or wireless mesh networks.

Course Pre-Requisites / Co-Requisites

Prereq: EEL 5718, Graduate student standing.

Course Objectives

In Spring 2019, students will learn about the operation and developing standards for mobile networks, such as Vehicular Networks, Unmanned Air Vehicles, and Small Satellites, and students will learn to analyze the performance of these cutting-edge networks.

Materials and Supply Fees

None

Required Textbooks and Software

- Title: Vehicular Communications and Networks: Architectures, Protocols, Operation and Deployment
 - Author: Wai Chen
 - Publication date, edition, and publisher: 2015, Elsevier
 - ISBN number: 9781782422167
 - Will be available online on course reserves through the UF Library, <http://uflib.ufl.edu>
- Software: network simulator -3 (ns-3)
 - Free download available at <https://www.nsnam.org/>

Recommended Materials

- Title: Intelligent Vehicular Networks and Communications Architectures and Solutions
- Author: Anand Paul
- Publication date, edition, and publisher: 2017, Elsevier
- ISBN number: 9780128095461

Course Schedule

- Week 1: Introduction and Overview (Chapter 1)
- Week 2: Vehicular ad Hoc Networks (VANETs) and Intelligent Vehicular Communications (Chapter 2)
- Week 3: Medium access Control in Vehicular Ad Hoc Networks (Chapter 3)
- Week 4: Information Dissemination and Broadcasting in Vehicular Networks (Chapter 4&5)
- Week 5: Student Project Proposal Presentations
- Week 6: Opportunistic Routing and Delay-Tolerant Networking in Vehicular Communications (Chapter 6)
- Week 7: Midterm Exam
- Week 8: Dynamic Spectrum access and Cognitive Radio for Vehicular Communication Networks (Chapter 7)
- Week 9: Spring Break
- Week 10: Simulative Performance Evaluation of Vehicular Networks (*Chapter 12*)
- Week 11: Modeling and Evaluation of Location-Based Forwarding in Vehicular Networks (Chapter 8)
- Week 12: Security and Privacy in Vehicular Networks (Chapter 9)
- Week 13: Student Presentations of Review Paper Reports
- Week 14: Connected Vehicles in an Intelligent Transport System (Chapter 10)
- Week 15: Vehicular Networks and Big Data
- Week 16: Student Demonstrations of Projects

Attendance Policy, Class Expectations, and Make-Up Policy

- Electronic submission of homework and project assignments in Canvas is required.
Formats: PDF (preferred), MS Word, or Text
- Access to a computer programming or simulation tool may be required for homework and assignments. Access will be free to students (either by UF agreement with company or by use of open source simulators.)
- Regular Participation is Expected:
 - Perfect class attendance is not required, but regular participation is expected. It will be tracked through participation in the in-class events and assignments.
 - It is the student's responsibility to independently obtain material from missed lectures.
 - Excused absences are consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate 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 graduate catalog or pre-approved by the instructor, accompanied by verifiable documentation.)
- Individual Effort
 - All assignments are assumed to be an individual effort unless otherwise specified by the instructor.
- Announcements and updates will be made in Lecture or via Canvas/Canvas mail.
 - Canvas mail sends announcements to your gatorlink email. You will need to check it regularly.

Evaluation of Grades

Assignment	Percentage of Final Grade
Homework Sets (4)	10%
Midterm Exam	25%
Review Report Presentations	25%
Course Project	35%
Class Participation Grade	5%
TOTAL	100%

Grading Policy

NOTE: This grading scale does not include any curve that may be applied to the course.

Percent	Grade	Grade Points
93 - 100	A	4.00
90 - 92	A-	3.67
87 - 89	B+	3.33
83 - 86	B	3.00
80 - 82	B-	2.67
77 - 79	C+	2.33
73 - 76	C	2.00
70 - 72	C-	1.67
67 - 69	D+	1.33
63 - 66	D	1.00
60 - 62	D-	0.67
0 - 59	E	0.00

In order to graduate, graduate students must have an overall GPA and a major GPA of 3.0 or better (B or better). Note: A "B-" average is equivalent to a GPA of 2.67, and therefore, it does not satisfy this graduation requirement.

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020>

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 feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. 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://evaluations.ufl.edu/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://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 student 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.

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/>.

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.
<http://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>.