

**San José State University**  
**Department of Aviation & Technology**  
**Tech 165 Wireless Communications Technologies (Sec 01), Fall 2018**

**Course and Contact Information**

<b>Instructor:</b>	Fariah Mahzabeen
<b>Office Location:</b>	Nima's office (Aviation and Technology admin's room)
<b>Email:</b>	fariahmahzabeen@gmail.com
<b>Office Hours:</b>	MW: 11.30 – 12 (and by appointment)
<b>Class Days/Time:</b>	MW: 10:30 – 11:20 Lecture M: 3 – 5:45 Lab
<b>Classroom:</b>	Engr 395
<b>Prerequisites:</b>	Tech 63 and Tech 65

**Course Format**

The course relies on lecture and lab materials presented in class and students are strongly encouraged to attend.

**Course Description**

Digital wireless technologies. RF Communications. Wireless Personal Area Networks. Wireless Local Area Networks. Wireless Metropolitan Area Networks. Wireless Satellite Fixed Broadband. Wireless Wide Area Networks. Radio Frequency Identification. Wireless Communications in Business. Emerging wireless technologies.

**Course Learning Outcomes (CLO)**

Upon successful completion of this course, students will be able to:

1. Describe the limitations, advantages, and disadvantages of each major wireless network architecture.
2. Identify and select appropriate hardware and software for specific WLAN needs.
3. Troubleshoot a basic wireless computer network.
4. Design and setup a simple wireless LAN.

## **Required Texts/Readings**

### **Textbook**

Olenewa, J. (2014). Guide to Wireless Communications. 3<sup>rd</sup> Ed. Cambridge, MA: Course Technology. ISBN-13: 9781111307318. Available at Spartan Bookstore/

### **Course Requirements and Assignments**

You will answer selected questions for each chapter. Homework and lab assignments will be posted on Canvas. You should submit your work via Canvas by the due date.

### **Final Examination**

The final exam will be comprehensive, covering all material presented in class.

### **Lab assignments**

#### Real-World Exercises

You will work in groups of 2-3 students to answer and submit the Real-World Exercises reports (located in the textbook) on or before the due date. Only one report per group. Only the indicated students will get the credit. Real-World Exercises contribute to CLO 2, applying the course material in solving proposed scenarios related to wireless computer networks and developing teamwork skills. Real-World Exercises are submitted weekly.

#### Hands-On Projects

You will work in groups of 2-3 classmates to perform Hands-On Projects to install, configure, and optimize basic wireless networks. The Hands-On Projects are in the textbook. It is possible that you might need to rethink your answers to the Hands-On Projects and this is part of the learning process. It is strongly recommended that you work in teams. Hands-On Projects contribute to CLO 2, reinforcing the course material and developing teamwork skills. Hands-On Projects are submitted weekly.

### **Grading Information**

Homework	10%
Quizzes	15%
Midterms	25%
Lab	25%
Final Exam	25%

The final grade will be determined according to the following scale distributed on average class performance:

A+ 96-100	B+ 87-89	C+ 77-79	D+ 67-69	F <60
A 93-95	B 83-86	C 73-76	D 63-69	
A- 90-92	B- 80-82	C- 79-72	D- 60-62	

1. Check continuously your standing in the class on [Canvas](https://sjsu.instructure.com) (https://sjsu.instructure.com). Notify the instructor immediately if there is an error in any of your grades.
2. All late assignments submitted up to 7 calendar days after the due date and time will have a penalty of 10% per day.
3. **Assignments submitted after 7 calendar days of the due date will not be accepted and they will be recorded as 00.**
4. There will not be any makeup quiz, but your lowest quiz grade will not be considered.

### **Classroom Protocol**

Class participation and attendance are strongly encouraged. Use of cell-phones are not allowed. Laptop computers and tablet are allowed only for taking lecture notes and related work to the lectures.

### **University Policies**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at <http://www.sjsu.edu/gup/syllabusinfo/>

### **Students with Special Need**

If you need special accommodation, please contact Accessible Education Center at your earliest convenience. You can find more information at <http://www.sjsu.edu/aec/faculty/index.html>.

## Tech 165 Wireless Communications Technologies, Fall 2017 Course Schedule/Outline

### Tentative Calendar (just a broad outline)

Week	Topics, Readings, Assignments, Deadlines
1, Aug 23 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Introduction, Course Organization, Orientation</li> <li>• Chapter 1: Introduction to Wireless Communications</li> </ul>
2, Aug 28 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Continue Chapter 1</li> <li>• Chapter 2: Wireless Data Transmission</li> </ul>
3, September 4 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Continue Chapter 2</li> </ul>
4, September 19 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 3: Radio Frequency Communications</li> </ul>
5, September 26 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Continue Chapter 3</li> <li>• Chapter 4: How Antennas Work</li> </ul>
TBA	<ul style="list-style-type: none"> <li>• Midterm</li> </ul>
6, October 2 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 5: Wireless Personal Area Networks</li> </ul>
7, October 9 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Continue chapter 5</li> <li>• Review chapters 1-5</li> <li>• Exam 1</li> </ul>
8, October 16 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 6: High-Rate Wireless Personal Area Networks</li> </ul>
9, October 23 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 7: Low-Speed Wireless Local Area Networks</li> <li>•</li> </ul>
10, October 30 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 8: High-Speed WLANs and WLAN Security</li> </ul>
11, November 6 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 9: Wireless Metropolitan Area Networks</li> </ul>
12, November 13 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 9: Wireless Metropolitan Area Networks</li> </ul>
13, November 20 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 10: Wireless Wide Area Networks (cellular)</li> </ul>
14, November 27 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Chapter 10: Wireless Wide Area Networks (cellular)</li> </ul>
15, December 4 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Review week</li> </ul>
TBA	<ul style="list-style-type: none"> <li>• Final exam</li> </ul>