Texas A&M University-San Antonio
College of Science and Arts

ESET 3205 Near and Far Field Communication
Fall 2025
August 25, 2025 – December 12, 2025

Instructor: Dr. Yuvaraj Munian
Email: ymunian@tamusa.edu
Time: Tuesday   **14:00 AM – 15:45 PM**
Location: STEM 243
Course Mode: F2F

Office hours: TR - 9:00 AM-11:00 AM (or by appointment through email)
Office Location: STEM 211W
Credit Hours: 2 Credits (Lecture) + 1 Credit (LAB)
Assignments: Blackboard

Course Description:

The nature and characteristics of the electromagnetic field radiated from an antenna in near and far field regimes. Transition from near to far field. Relation between transmitting antenna and receiving antenna in the near field region. Antenna design for near and far field communication. Data encryption in wireless communication

Through lectures, discussions, and hands-on simulation exercises using MATLAB/Python, students will gain practical experience analyzing bit error rates, modeling fading environments, and evaluating system performance under different wireless scenarios. The course also introduces advanced topics including MIMO, OFDM, and emerging trends such as 6G, IoT, and AI-driven wireless networks.

Course Objective:

By the end of this course, students will:

- Understand the fundamental nature and characteristics of electromagnetic fields generated by antennas.
- Distinguish between near-field and far-field regimes, including the mathematical and physical criteria for transition.
- Analyze interactions between transmitting and receiving antennas in the near-field region.
- Study antenna design considerations for short-range (near-field) and long-range (far-field) communication.
- Explore secure wireless communication by integrating concepts of data encryption in IoT and antenna-based systems.

Learning Outcomes:

1. **Explain** Maxwell's equations as they apply to antenna radiation.
2. **Differentiate** between reactive near-field, radiating near-field (Fresnel), and far-field (Fraunhofer) regions.
3. **Compute** transition distance from near- to far-field for practical antennas.
4. **Evaluate** coupling and mutual impedance between Tx and Rx antennas in the near field.
5. **Design** antennas suitable for RFID/NFC (near-field) and Wi-Fi/5G (far-field) applications.
6. **Simulate & measure** near- and far-field patterns using MATLAB/Python or antenna measurement setups.
7. **Apply** encryption techniques to secure wireless communication channels in IoT applications.

Reading and Supplementary Materials:

Ref1: Advanced Engineering Electromagnetics: Balanis. A. Constantine, 3rd Edition, ISBN: 978-1-394-18001-1

Ref2: Antenna Theory: Analysis and Design: Balanis. A. Constantine, 4th Edition, ISBN: 978-1-118-64206-1

Ref3: Introduction to IOT, Sudip Misra, Anandarup Mukherjee & Arijit Roy, ISBN 978-1-108-84295-2

Ref4: Wireless AI, K.J.Ray Liu and Beibei Wang, ISBN 978-1-108-49786-2

Hardware & Software*

Your learning will be enhanced if you purchase the recommended hardware for this course. I recommend the Arduino Uno Rev 3 Ultimate Starter Kit, http://www.vilros.com/ultimate-starter-kit.html which costs approximately $54.99 USD. You don't need to purchase any software but you will need to download the Arduino IDE for free from https://www.arduino.cc/

If you do not have an Arduino, you can use the web-based Arduino simulator at 123d.circuits.io outside the lab. You will need to create an account for free. There are instructional videos on that website that will teach you how to use the simulator.

Prerequisite: Arduino Programming in C https://www.coursera.org/learn/arduino-platform/

Taking Notes*: **Numerous studies, including one from NPR (below), states the importance of note-taking and how it helps students comprehend the subject matter.** You are expected to take notes of your own from each session. Supporting documents will be available on BB.

Link: https://www.npr.org/2016/04/17/474525392/attention-students-put-your-laptops-away

Contact: Suggest utilizing office hours, and other times, by appointment. All contact should only be via TAMUSA email (ymunian@tamusa.edu). Expect a reply via email within 24-48 business hours. Usually, any email sent on Friday(s) after 5 pm is answered the upcoming Monday. Upon Technical issues, contact Pearson or IT @ TAMUSA!

NOTE: The subject of the email messages to the instructor must begin with the course name, followed by a brief description of the subject. **For example (i) sub: ESET 3302 - Appointment request (ii) sub: FOWC_Wir Comm- Issue with HW3 Q2. If you do not follow this convention, expect delays!**

Student Commitment: Students in *Foundations of Wireless Communication* are expected to actively attend and participate in lectures and labs, complete readings and assignments on time, and uphold academic integrity. They should engage in hands-on experiments, contribute responsibly to group work, and communicate professionally with peers and faculty. A commitment to independent learning, openness to feedback, and continuous improvement will be essential to succeed in mastering both the theoretical and practical aspects of wireless communication systems.

A standard is that for every hour a student spends in Class, they are expected to spend a minimum of 3 hours comprehending the material and doing the required assignment.

Total Lecture hours = 3 hr./ week (1.5 hr in-person 1.5 hr through Blackboard). Hence expected to spend a minimum of an additional 9 hours doing all the required assignments and comprehension. The total minimum Hours suggested for this course equals 9 Hrs/Week.

Technology Requirements:

Please contact IT (helpdesk@tamusa.edu/ call 210 784 4357) at TAMUSA with any technology-related questions, ASAP. You can keep me in the loop, and if you ask me anything I.T.-related, I will not be of any help; instead will ask you to contact IT.

You should have all the bells and whistles to access class material, perform assignments, take Exams, etc.

Bells and whistles (include but not all)

- A working computer/ Laptop with Windows, Mac, or Chromebook Operating system
- Proper internet connection
- Software to read/ write Word and PDF documents
- Working computer peripherals like a **camera, microphone**, etc.

Course Material + Access:

➢ **Reading Assignment (RA):** Students are required to read specific sections in the textbook before each lecture, to enable a teaching style somewhat similar to a "flipped classroom", i.e., concentrating on the intuitive understanding of the material, computational problems, etc., instead of derivations of equations.
  - **RA (not graded) should be completed 11:59 pm CST every Friday, + Questions from students need to be posted on Discussion Board by midnight every Saturday!**
➢ **Homeworks** will be assigned, falling mainly into three categories
  - Computational exercises related to the specific chapters were treated during the past instruction week.

- o Computational exercises requiring a "big picture" approach, using material from different lectures throughout the semester
- o MATLAB simulations are to be written by the students to cover more realistic scenarios for which closed-form equations often do not exist.
- ➢ **Final Project: See below**
- ➢ Students should be prepared to turn in their solutions by their due date. **No late assignments will be accepted, nor are make-ups allowed**.
- ➢ If you cannot submit answers to any assignment online and are within the deadline, you can only get credit for your work by emailing the instructor your completed assignment. Please take pictures/snapshots of the issue faced online so it can be addressed.
- ➢ Above mentioned assignments and ebooks can be accessed via BB. Before you start, ensure cookies and cache are cleared from your browser.

Office hours:
Students need to attend these sessions as scheduled every *Tuesday & Thursday*. No new topic will be discussed during lab hours. We may have a pop Quiz, followed by a discussion, then a Reading Assignment-based critical Questionnaire discussion and Discussion of concepts or problems on the topic at hand that Week or earlier, as needed.

Instructor Policies
Cell Phone Use
Cell phone use is prohibited once Class begins, and they are to be silenced and put away where they are not seen. If a call is expected, take it out of the Class, and anyone that interrupts Class due to a cell phone will be asked to leave.
Laptop Use
Turn off the personal laptop. During lecture time, the laptop is not needed. For project discussions, the personal laptop is allowed only when the instructor gives permission.
Food in Class
Eating or drinking is NOT permitted in the classes. Students with food or drink will be asked to discard them or leave the room.
Exams:
There will be three (3) exams during the semester: all to be taken at the scheduled date, time, and location(in Class)/ no makeup allowed!

Tentative Schedule*

Week	Dates	Topics	Details
1	08/26/2025	Syllabus, Environment Setup, Introduction to IoT Types of Network Connections Types of Computer Networks	
2	09/02/2025	ISO-OSI Model Seven layers Intro to Electromagnetic radiations	
3	09/09/2025	Maxwell's Equation	
4	09/16/2025	Intro about the Near and Far communication	

5	09/23/2025	Far Field communication	
6	09/30/2025	Antennas types and it's Radiations	
7	10/07/2025	Exam 1 (MCQ & Short Answers)	**Exam 1 (MCQ & Short Answers)**
8	10/14/2025	Propagation Delay and Losses	**Project Title Submission**
9	10/21/2025	Intoduction to wireless Communication and its advantages	
10	10/28/2025	Intro to Rasberry pi & Arduino	**First level Project Discussion**
11	11/04/2025	Interfacing stepper motor and temperature sensor	**Exam 2 (MCQ & Short Answers)**
12	11/11/2025	Application based on the water level detector	
13	11/18/2025	Apllication with Rasberry pi	
14	11/25/2025	Cilent to Server Communication application	
15	12/02/2025	Project Review & Presentation	**DEC 04 Last Day of classes**
16	12/06/2025 – 12/12/2025	**Final Exams** – As per University Schedule	**Final Exams must be held only as per Univ Schedule.**

* Specific content and Schedule may be revised as deemed necessary by the instructor.

CURVE: **One lowest grade among weekly assignments will be dropped. *All exams are mandatory and no grade replacement is possible!**

No make-up Exams, but if you miss an exam, you should contact me by email (**with a valid documented excuse, see below**), at least one week in advance or within 24-hrs of the scheduled exam date for emergency cases. Any missed exam counts as a 0 unless the student has a **valid documented excuse**.
Examples of valid documented excuses are sickness documented with a doctor's note, death in the family documented with a copy of the death notice, and attending university-sponsored events with a Dean's (Dean of Students) excuse.

Final Project: Students <u>must</u> prepare a report and present it during Finals week. Final exams cannot be rescheduled or missed. Students will work in teams (2-3 students/team). Each team will identify (or use previous) a practical electronic engineering project (e.g., research, prototype, product, or design) and submit their project plan with a timeline at week 4 to the instructor for approval. Each team will have to submit a report that describes and analyzes the main findings (Week 14-15) and present the work in Class (during Finals week). The Report should not exceed 10 pages double-spaced, 12 font size with 1-inch margins, and the Final presentation should not exceed 25 slides. The project should demonstrate the student's ability to transfer the knowledge and skills acquired in the course to real-world applications.

See Appendix A: Presentation Rubric and Project Grading Rubric.

Grading Policy

The final course grade for Lecture is calculated as follows:

- Homework 20 %: Homework 10% & Computer Assignments 10%.
- Quizzes & Attendance 10%,
- Recent Research Topic Presentation: 10% (See Appendix A)
- Final Project: 15% (See Appendix A)
- Exams: 45% (Exam I - 10%, Exam II - 15%, Exam III - 20%)

Course grades are awarded as follows:

A: Over 90.0%; B: 80 ~ 89.99%; C: 70.0 ~ 79.99%; D: 60.0 ~ 69.99%; F: less than 59.99%.

Academic Calendar:
http://www.tamusa.edu/provost/academicresources/academiccalendar.html

ACADEMIC INTEGRITY:

We take this very seriously!!!
(See https://www.tamusa.edu/university-policies/student-rights-and-responsibilities/documents/student-handbook.pdf)
"According to the Student Code of Conduct, the following are violations of Academic misconduct: Cheating, Plagiarism, Multiple Submissions, Collusion, Lying, and Bribery.

Plagiarism, or copying the words of others with the intent of making it look like your own. Whether you use someone else's phrase word for word, or whether you try and change a few words, or even if you just borrow someone else's original idea and don't give them credit, that's unethical. Use your own words whenever possible, give credit to wherever, and put direct quotes inside quotation marks.

Cheating involves trying to trick me or others into thinking you did work that you did not do.

Searching the Internet for homework solutions and copying what you find is considered cheating. Searching the Internet for help on a topic is okay. For example, suppose a question asks, "What are Newton's Laws of Motion." Typing that phrase into any internet search engine and cutting and pasting the text in the answer box is considered cheating. Typing " What are Newton's Laws of Motion " into any internet search engine, reading a few web pages, and summarizing the information in your own words is not cheating.

o *Borrowing a previous student's homework, exams, or solution sets is considered cheating. Likewise, copying your own homework answers or lab reports during an examination is considered cheating.*

o *Discuss homework with your peers, but give them credit when you learn more from them than what you share*

Collusion is defined as working with another person to cheat. This can include copying someone else's answers to an exam or assignment, doing work for another student, buying or otherwise obtaining homework/exam solutions from any source online or offline, or any other instance of multiple people engaging in some form of Cheating or Dishonesty. Working with other students on an assignment is fine as long as everyone contributes, and each student does their work."

Overall, If you have any doubt whatsoever whether a specific action is considered dishonest, please ask me *before* engaging in the activity. There is no need to be embarrassed about asking, and I will not penalize you for asking!

IMPORTANT POLICIES AND RESOURCES

Academic Accommodations for Individuals with Disabilities: Texas A&M University-San Antonio is committed to providing all students with reasonable access to learning opportunities and accommodations in accordance with The Americans with Disabilities Act, as amended, and Section 504 of the Rehabilitation Act. If you experience barriers to your education due to a disability or think you may have a disability, Disability Support Services is located in the Central Academic Building, Suite 210. You can also contact us via phone at (210) 784-1335, visit us https://www.tamusa.edu/Disability- Support-Services/index.html or email us at dss@tamusa.edu. Disabilities may include, but are not limited to, attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability-related needs with Disability Support Services as soon as possible.
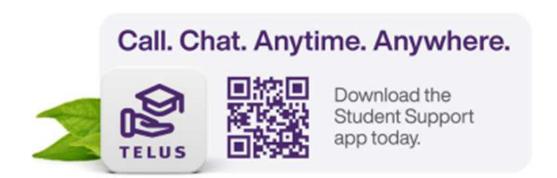
Academic Learning Center: The Academic Learning Center provides free course-based tutoring to all currently enrolled students at Texas A&M University-San Antonio. Students wishing to work with a tutor can make appointments through the Brainfuse online tutoring platform. Brainfuse can be accessed in the Tools section of Blackboard. You can contact the Academic Learning Center by emailing tutoring@tamusa.edu, calling (210) 784-1307, or visiting the Central Academic Building, room 202.

Counseling/Mental Health Resources: As a college student, there may be times when personal stressors interfere with your academic performance and negatively impact your daily functioning. If you are experiencing emotional difficulties or mental health concerns, support is available to you through the Student Counseling Center (SCC). To schedule an appointment, call 210-784-1331 or visit Madla 120.

All mental health services provided by the SCC are free and confidential (as the law allows). The Student Counseling Center provides brief individual and group therapy, crisis intervention, consultation, case management, and prevention services. For more information on SCC services visit http://tamusa.edu/studentcounseling

Crisis support is available 24/7 by calling the SCC at 210-784-1331.

Additionally, the TELUS Student Support App provides a variety of mental health resources to including support for in the moment distress, an anonymous peer-to-peer support network, mental health screenings, podcasts, and articles to improve your mental wellbeing.

Emergency Preparedness: JagE Alert is Texas A&M University-San Antonio's mass notification. In the event of an emergency, such as inclement weather, students, staff and faculty, who are registered, will

have the option to receive a text message, email with instructions and updates. To register or update your information visit: https://tamusa.bbcportal.com

More information about Emergency Operations Plan and the Emergency Action Plan can be found here: https://www.tamusa.edu/about-us/emergency-management/

Download the SafeZone App (https://safezoneapp.com/) for emergencies or call (210) 784-1911. Non-Emergency (210) 784-1900.

Financial Aid and Verification of Attendance: According to the following federal regulation, 34 CFR 668.21: U.S. Department of Education (DoE) Title IV regulation, a student can only receive Title IV funds based on Title IV eligibility criteria which include class attendance. If Title IV funds are disbursed to ineligible students (including students who fail to begin attendance), the institution must return these funds to the U.S. DoE within 30 days of becoming aware that the student will not or has not begun attendance. Faculty will provide the Office of Financial Aid with an electronic notification if a student has not attended by the published Census Date (the first week of class). Any student receiving federal financial aid who does not attend prior to the published Census Date (the first week of class) will have their aid terminated and returned to the DoE. Please note that any student who stops attending at any time during the semester may also need to return a portion of their federal aid.

Writing, Language, and Digital Composing Center: The Writing, Language, and Digital Composing Center supports graduate and undergraduate students in all three colleges as well as faculty and staff. Tutors work with students to develop reading skills, prepare oral presentations, and plan, draft, and revise their written assignments. Our language tutors support students enrolled in Spanish courses and students composing in Spanish for any assignment. Our digital studio tutors support students working on digital projects such as eportfolios, class presentations, or other digital multimedia projects. Students can schedule appointments through JagWire under the Student Services tab. Click on "Writing, Language, and Digital Composing Center" to make your appointment. The Center offers face-to-face, synchronous online, and asynchronous digital appointments. More information about what services we offer, how to make an appointment, and how to access your appointment can be found on our website at https://www.tamusa.edu/academics.

Meeting Basic Needs: Any student who has difficulty affording groceries or accessing sufficient food to eat every day or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to submit a CARE referral (https://www.tamusa.edu/university-policies/Student-Rights-and-Responsibilities/file-a-report.html) for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to direct you to available resources.

Office Hours: All faculty with teaching assignments should include regularly scheduled office hours on each syllabus in addition to "by appointment." Please review your appointment letter for the number of weekly office hours you are expected to set. Regularly scheduled office hours should also be posted outside your office door (where applicable).

Military Affairs: Veterans and active-duty military personnel are welcomed and encouraged to visit the Office of Military Affairs for any question involving federal or state VA Education Benefits. Visit the Patriots' Casa building, room 202, or to contact the Office of Military Affairs with any questions at military.va@tamusa.edu or (210)784-1397.

Religious Observances: Texas A&M University-San Antonio recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided with an opportunity to make up any

examination, study, or course work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes.

The Six-Drop Rule: Students are subject to the requirements of Senate Bill (SB) 1231 passed by the Texas Legislature in 2007. SB 1231 limits students to a maximum of six (6) non-punitive course drops (i.e., courses a student chooses to drop) during their undergraduate careers. A non-punitive drop does not affect the student's GPA. However, course drops that exceed the maximum allowed by SB 1231 will be treated as "F" grades and will impact the student's GPA.

Statement of Harassment and Discrimination: Texas A&M University-San Antonio is committed to the fundamental principles of academic freedom, equal opportunity, and human dignity. To fulfill its multiple missions as an institution of higher learning, A&M-San Antonio encourages a climate that values and nurtures collegiality and the uniqueness of the individual on our campus and within our state, nation, and world. All decisions and actions involving students and employees are to be based on applicable law and individual merit. Texas A&M University-San Antonio, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or pregnancy/parenting status. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the University's Civil Rights Officer at 210-784-2061 or titleix@tamusa.edu.

Texas A&M University-San Antonio faculty are committed to providing a safe learning environment for all students and for the university as a whole. If you have experienced any form of sex- or gender-based discrimination or harassment, including sexual assault, sexual harassment, domestic or dating violence, or stalking based on sex, know that help and support are available. A&M-San Antonio's Title IX Coordinator can support those impacted by such conduct in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The university strongly encourages all students to report any such incidents to the Title IX Coordinator. Please be aware that all A&M-San Antonio employees (other than those designated as confidential resources such as counselors and trained victim advocates) are required to report information about such discrimination and harassment to the university. This means that if you tell a faculty member about a situation of sexual harassment, sexual violence, or other related sex-based misconduct, the faculty member must share that information with the university's Title IX Coordinator (titleix@tamusa.edu, 210-784-2061, CAB 439K). If you wish to speak to a confidential employee who does not have this reporting requirement, you can contact the Student Counseling Center at (210) 784-1331 or visit them in Madla 120.

Pregnant/Parenting Students: Texas A&M-San Antonio does not require a pregnant or parenting student, solely because of that status or issues related to that status, to (1) take a leave of absence or withdraw from their degree or certificate program; (2) limit the student's studies; (3) participate in an alternative program; (4) change the student's major, degree, or certificate program; or (5) refrain from joining or cease participating in any course, activity, or program at the University. The university will provide such reasonable modifications to pregnant students as would be provided to a student with temporary medical condition that are related to the health and safety of the student and the student's unborn child. These could include maintaining a safe distance from substances, areas, and activities known to be hazardous to pregnant individuals and their unborn child; excused absences because of illness or medical appointments; modified due dates for assignments; rescheduled tests/exams; taking a leave of absence; and being provided access to instructional materials and video recordings of lectures for excused absences, if these would be provided to any other student with an excused absence. Pregnant/parenting students are encouraged to contact the Title IX Coordinator with any questions or concerns related to their status (titleix@tamusa.edu; 210-784-2061; CAB 439K). Texas A&M-San Antonio has also designated the Title IX Coordinator as the liaison officer for current or incoming students who are the parent or

guardian of a child younger than 18 years of age. The Title IX Coordinator can provide students with information regarding support services and other resources.

Young Jaguars: can support parenting students with daycare who meet this criteria: Must be enrolled in classes at TAMUSA in the current semester. Must be Pell eligible or a single parent. They serve children ages 3 to 12-years-old. Children must be enrolled in Pre-K-3 through 6th grade. youngjaguars@tamusa.edu (210) 784-2636

Students' Rights and Responsibilities: The following statement of students' rights and responsibilities is intended to reflect the philosophical base upon which University Student Rules are built. This philosophy acknowledges the existence of both rights and responsibilities, which is inherent to an individual not only as a student at Texas A&M University-San Antonio but also as a citizen of this country.

Students' Rights

1. A student shall have the right to participate in a free exchange of ideas, and there shall be no University rule or administrative rule that in any way abridges the rights of freedom of speech, expression, petition and peaceful assembly as set forth in the U.S. Constitution.
2. Each student shall have the right to participate in all areas and activities of the University, free from any form of discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, gender identity, gender expression, and pregnancy/parenting or veteran status in accordance with applicable federal and state laws.
3. A student has the right to personal privacy except as otherwise provided by law, and this will be observed by students and University authorities alike.
4. Each student subject to disciplinary action arising from violations of university students' rules shall be assured a fundamentally fair process.

Students' Responsibilities

1. A student has the responsibility to respect the rights and property of others, including other students, the faculty, and administration.
2. A student has the responsibility to be fully acquainted with the published University Student Rules found in the Student Handbook, Student Code of Conduct, on our website, and University Catalog, and to comply with them, as well as with federal, state, and local laws.
3. A student has the responsibility to recognize that student actions reflect upon the individuals involved and upon the entire University community.
4. A student has the responsibility to recognize the University's obligation to provide a safe environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notifications.

We expect that students will behave in a manner that is dignified, respectful, and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation, or disability. Conduct that infringes on the rights of another individual will not be tolerated.

Students are expected to exhibit a high level of honesty and integrity in their pursuit of higher education. Students engaging in an act that violates the standards of academic integrity will find themselves facing academic and/or disciplinary sanctions. Academic misconduct is any act, or attempt, which gives an unfair advantage to the student. Additionally, any behavior specifically prohibited by a faculty member in the course syllabus or class discussion may be considered as academic misconduct.

For more information on academic misconduct policies and procedures please review the Student Code of Conduct (https://www.tamusa.edu/university-policies/student-rights-andresponsibilities/documents/Student-Handbook-2022-23.pdf) or visit the resources available in the OSRR website (https://www.tamusa.edu/university-policies/student-rights-and-responsibilities/academicintegrity.html).

Insert ONE of the AI policy options listed below in your syllabi – Select the one you believe is most appropriate for your course.

Option 1 - No Use of Generative AI Permitted

[Insert Course Number] assumes that all work submitted by students will be generated by the students themselves, working individually or in groups. Students should not have another person/entity do the writing of any portion of an assignment for them, which includes hiring a person or a company to write assignments and/or using artificial intelligence (AI) tools like ChatGPT. Use of any AI-generated content in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

Option 2 – Use of Generative AI Permitted Under Some Circumstances or With Explicit Permission

There are situations and contexts within this course where you may be asked to use artificial intelligence (AI) tools to explore how they can be used. Outside of those circumstances, you should not use AI tools to generate content (text, video, audio, images) that will end up in any student work (assignments, activities, discussion responses, etc.) that is part of your evaluation in this course. Any student work submitted using AI tools should clearly indicate with attribution what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, students should reach out to their instructor for clarification before submitting work for grading. Use of AI-generated content without the instructor's permission and/or proper attribution in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

Option 3 – Broader Use of Generative AI Permitted Within Guidelines

Use of artificial intelligence (AI) tools, including ChatGPT, is permitted in this course for students who wish to use them. To adhere to our scholarly values, students must cite any AI-generated material that informed their work (this includes in-text citations and/or use of quotations, and in your reference list). Using an AI tool to generate content without proper attribution qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

Option 4 – Customized Policy Generative AI Policy

Faculty may create a customized policy that is unique for a specific course with consultation from the department chair. Faculty are encouraged to view Texas A&M University's Generative AI Syllabus Statement Considerations when preparing a customized AI policy.

NOTE: Guidance for how to cite AI-generators, like ChatGPT, can be found here https://apastyle.apa.org/blog/how-to-cite-chatgpt

Option 2/Option 4 will be used for the ESET 3302_Foundation of Wireless Communication

Important Dates: Fall 2025 Regular 16-Week Session

August 25	First day of class
September 1	Labor Day Holiday – No Classes
September 10	Census Date
November 14	Last Day to drop with an automatic "W"
November 25	Last day to withdraw from the University
November 26	Study Day – No classes
November 27-29	Thanksgiving Holiday – No classes
December 4	Last day of classes
December 5	Study Day – No classes
December 6-12	Final exams
December 16	Commencement

Academic Calendar:
https://www.tamusa.edu/academics/academic-calendar/index.html

APPENDIX A

Final Project Grading Rubric

Rubric for Final Project

Criteria	Excellent (Full Points)	Good (Mid Range)	Fair (Low Range)	Poor (Minimal/No Points)	Total
Problem Definition & Objectives	Clear, well-motivated problem; precise measurable objectives (9–10)	Problem stated; objectives somewhat specific (7–8)	Vague problem; general/incomplete objectives (5–6)	No clear problem or objectives (0–4)	10%
Background & Literature Review	Strong connection to wireless theory; references to standards/research (13–15)	Some theoretical grounding; missing depth (10–12)	Minimal review; weak connection to goals (7–9)	No background or incorrect understanding (0–6)	15%
Technical Approach & Methodology	Well-structured; correct use of models (channel, modulation, BER, etc.); justified methods (22–25)	Sound methodology; minor flaws (18–21)	Limited methodology; unclear justification (13–17)	Weak/incorrect methodology (0–12)	25%
Implementation / Simulation / Experimentation	Successful MATLAB/Python/NS-3/SDR implementation; well-documented (18–20)	Working implementation; minor errors (15–17)	Partial/unclear implementation (10–14)	No implementation or incorrect execution (0–9)	20%
Results & Analysis	Clear results with graphs/metrics; compared to theory/benchmarks (18–20)	Results presented; limited analysis (15–17)	Superficial/incomplete results (10–14)	No results or misinterpreted data (0–9)	20%

Presentation & Report	Well-structured; clear writing; professional figures; strong oral presentation (9–10)	Understandable but lacks polish/organization (7–8)	Disorganized; unclear figures/writing (5–6)	Incomplete/poor presentation (0–4)	10%

Rubric for Recent Research Topic Presentation

Criteria	Excellent (Full Points)	Good (Mid Range)	Fair (Low Range)	Poor (Minimal/No Points)	Total
Topic Relevance & Selection	Highly relevant, timely research topic; clear justification for selection (9–10)	Relevant topic; justification somewhat clear (7–8)	Somewhat relevant; weak justification (5–6)	Not relevant or no justification (0–4)	10%
Understanding of Research Paper/Topic	Demonstrates deep understanding; explains key contributions, methods, and findings accurately (18–20)	Good understanding; minor inaccuracies or lack of detail (15–17)	Partial understanding; key points missing or misunderstood (10–14)	Little to no understanding; major errors (0–9)	20%
Critical Analysis & Insight	Provides strong critique; compares with related work; discusses strengths, weaknesses, and future directions (18–20)	Some critique and insights; limited comparison or depth (15–17)	Minimal critique; descriptive rather than analytical (10–14)	No analysis; purely descriptive or incorrect (0–9)	20%
Clarity & Organization of Presentation	Well-structured, logical flow; clear transitions; easy to follow (13–15)	Mostly clear and organized; minor issues with flow (10–12)	Somewhat unclear; organization weak (7–9)	Disorganized; difficult to follow (0–6)	15%
Use of Visuals & Communication Skills	High-quality slides/visuals; professional style; strong verbal communication and delivery (13–15)	Adequate visuals and delivery; minor issues (10–12)	Basic visuals; weak delivery (7–9)	Poor visuals; very weak communication (0–6)	15%
Engagement & Q/A Handling	Engages audience effectively; confident and accurate responses to questions (13–15)	Some engagement; mostly accurate answers (10–12)	Limited engagement; partial answers (7–9)	No engagement; unable to answer questions (0–6)	15%
Total					100%