Nashville State Community College  
Computer and Engineering Technologies Division  
Electrical Engineering Technology  

Master Course Syllabus  

EETH 2220 Electronic Communications  
2 Credits  
2 Class Hours  
An introductory course in electronic communications. Topics include signal generation, amplitude modulation, transmission and reception, single sideband systems, angle modulation transmission, angle modulation receivers, FM stereo and two-way FM, television, transmission lines, electromagnetic wave propagation, antennas and waveguides, microwave communications, and satellite communications.  

Prerequisite: EETH 1210  

Instructor Information:  
Name:  
Email:  
Office Phone:  
Office Location:  
Office Hours:  

Textbook and Other Materials:  
Reference Materials:  
Supplies:  

Course Outcomes:  
Upon successful completion of this course, students should be able to:  
- Evaluate the advantages and disadvantages of amplitude modulation (AM) transmission and reception  
- Evaluate the advantages and disadvantages of frequency modulation (FM) transmission and reception  
- Evaluate the effect on electro-magnetic waves as they travel through different medium and different atmospheric conditions  
- Evaluate the advantages and disadvantages of different antenna configurations  
- Evaluate the advantages and disadvantages of microwave transmission and reception, both earth station to earth station and satellite to earth station  

Course Competencies:  
The following are detailed course competencies intended to support the course outcomes
• explain the ideas involved in signal analysis with emphasis on noise impact and communication basics

• identify selected oscillator circuits and calculate reference frequencies

• explain the concept of "AM" modulation and be able to calculate associated AM parameters (such as coefficient of modulation, local oscillator frequency given a specific RF frequency, carrier power, etc.)

• mathematically and graphically analyze "AM" circuits

• identify all the components of an "AM" receiver with their respective characteristics

• explain the components of and operating characteristics of phase-locked loop circuits

• mathematically analyze a phase-locked loop circuit

• explain the single-side band circuit and identify its advantages and disadvantages

• explain the concepts involved in angle modulation (both phase and frequency)

• identify basic components in both an AM and an FM transmitter circuit

• explain the operational concepts of selected detector circuits

• analyze FM transmissions using Bessel functions

• mathematically solve transmission line parameters (such as standing wave ratios, input impedance, etc.)

• explain the pertinent concepts in information propagation

• explain the propagation patterns of selected antennae

• explain the operational concepts and appropriate circuits involved in a television receiver

• describe the basics of a ground based microwave communication system

• explain the operation of a satellite communication system, including frequency allocations and transmissions parameters

• Use computer simulations to demonstrate the operation of concepts covered
Course Assessments:
The following performance assessments will be used to demonstrate students' understanding, knowledge and skills:

A midterm and final exam will be administered consisting of both quantitative questions based on assigned homework and conceptual essay type questions where the student will explain in his own words an understanding of the material. These essays are graded for both technical accuracy and clarity. A written technical report is required on a topic requiring more depth of knowledge than can be found in the text and requires extensive research using the Internet. This information must additionally be presented to the class in a PowerPoint format to demonstrate his understanding of the material. This presentation is evaluated on a 100 point sheet that is standard for the Electrical Engineering Technology program.

Grading Policy
Hourly Exams 30%
Technical Report 30%
Class Presentation 10%
Final Exam 20%
Homework 10%

Grading Scale:
A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (less than 60%)

Topics to Be Covered:

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| 14    | Chapter 26 Classroom
                              Presentation
                              Technical Report
                              Due
Attendance Policy
A student is expected to attend all scheduled classes and laboratories. Each instructor will formulate an attendance policy and provide it on the course syllabus. Absences are counted from the first scheduled meeting of the class, and it is the responsibility of each student to know the attendance policy of each instructor in whose class he/she is enrolled. If a student is absent from a class, he/she should give an advanced explanation to the instructor. Absences in a course may affect a student’s final grade. The student is responsible for all assigned work in the course regardless of excused or unexcused absences. Tardiness may also affect a student’s final grade.
Failure to attend class will result in a final course grade of “FA” or “FN” (see explanation below) depending on the individual instructor’s course policy.
FA= failure, attendance-related (unofficial withdrawal) Last recorded date of attendance required.
FN= failure, never attended class (unofficial withdrawal)

Student Communication Channels
It is the student’s responsibility to check D2L and MyNSCC email on a regular basis. These are the official communication channels between the college and students. Students are responsible for the information communicated through those channels. D2L contains specific course information and MyNSCC contains information important for other purposes.

Early Warning System
Nashville State Community College has implemented an Early Warning System to notify students via e-mail about academic problems such as poor classroom attendance, poor performance on assignments/tests, poor communication skills, late/missing assignments, and/or lack of classroom participation. Please note that Early Warning Alerts do not affect a student’s academic standing.

ADA Compliance Statement
Nashville State complies with the Americans with Disabilities Act. Please contact the Access Services Coordinators at 615-353-3721 or 615-353-3741 if you would like to arrange ADA accommodations.

Classroom Misconduct
Nashville State Community College has a zero tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary sanctions. Please consult your Student Handbook for more specific details.
The instructor has primary responsibility for control over classroom behavior and maintenance of academic integrity. He/she can order temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or in conduct which violates the general rules and regulations of the College.
Disruptive behavior in the classroom may be defined as, but is not limited to, behavior that obstructs or disrupts the learning environment (e.g., offensive language, harassment of students and professors, repeated outbursts from a student which disrupt the flow of instruction or prevent concentration on the subject taught, failure to cooperate in maintaining classroom decorum, etc.), the continued use of any electronic or other noise or light emitting device which
disturbs others (e.g., disturbing noises from beepers, cell phones, palm pilots, lap-top computers, games, etc.).
Please be aware that children are not allowed in class or unattended on campus.

**Academic Dishonesty (Honor Code)**

Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. “Plagiarism may result from: (1) failing to cite quotations and borrowed ideas, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words (A Writer’s Reference 331). Academic dishonesty may be defined as, but is not limited to, intentionally trying to deceive by claiming credit for the work of another person, using information from a web page or source without citing the reference, fraudulently using someone else’s work on an exam, paper, or assignment, recycling your own work from another course, purchasing papers or materials from another source and presenting them as your own, attempting to obtain exams/materials/assignments in advance of the date of administration by the instructor, impersonating someone else in a testing situation, providing confidential test information to someone else, submitting the same assignment in two different classes without requesting both instructor’s permission, allowing someone else to copy or use your work, using someone else’s work to complete your own, altering documents, transcripts or grades, and forging a faculty/staff member’s signature.

In addition to other possible disciplinary sanctions that may be imposed through regular college procedures as a result of academic dishonesty the instructor has the authority to assign an “F” or a “Zero” for the exercise, paper, or examination or to assign an “F” for the course. Students may appeal through the appropriate college grade appeal procedures.

**Inclement Weather Policy**

In the event of an inclement weather event, check the Nashville State web site home page at www.nscc.edu for announcements on campus closures. Campus closures will also be announced on local television stations (channels 2, 4, 5, and 17). When classes are cancelled, an online assignment will be posted in NS Online. Check your NS Online email for a message from your instructor regarding your online assignment requirements. Even though classes may be cancelled, some areas, i.e. Testing Center, may be open. However, you should check before commuting to campus.

The Vice President for Academic Affairs and the Director of Security are responsible for cancellation decisions during an inclement weather event for the Nashville State main campus and the Southeast campus. Cookeville, Waverly, and Dickson Campus Directors will make class cancellations decisions based on conditions in their respective areas. Decisions about class cancellations are based on actual conditions, not forecasts. The perspective used for making decisions is that of the college as an employer, not as a K-12 institution. Students should use their own best judgment in determining whether to report to campus during inclement weather when classes are not cancelled.

**NOTE:** This syllabus is meant simply as a guide and overview of the course. Some items are subject to change or may be revised at the instructor’s discretion. Each instructor will further clarify their criteria for grading, classroom procedures, attendance, exams and dates, etc. on his/her course syllabus.