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

Master Course Syllabus

EETH 2230 Digital Communications
2 Credits
2 Class Hours
Acquaints the student with the operations and theory of electronic communications systems. The theory of digital pulse modulation communications, multiplexing in broadband systems covering coaxial cables, fiber optic links, public telephone networks including cellular, data link protocols and data communications and their practical uses are covered.

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 different techniques of digital modulation
- Evaluate the components of PCM digital transmission including compression techniques and noise suppression
- Evaluate the advantages and disadvantages of different data-link protocols and data communications networks
- Evaluate the advantages and disadvantages of North American T-Carrier system
- Evaluate the advantages of wired and wireless networks
- Evaluate the advantages of a VoIP digital PBX network

Course Competencies:
The following are detailed course competencies intended to support the course outcomes
• calculate appropriate parameters of digital modulation (shift keying)

• identify digital systems and codes used to transmit data between systems using both serial and parallel transmission

• explain synchronization, error detection, and pulse code modulation methods

• 4. explain the operation of standard data communications interfaces

• identify local and wide area networks

• explain the protocols used in both synchronous and asynchronous data communications

• identify the contents of data packets

• explain data-link protocols used in local area networks

• explain the difference between and the use of frequency division multiplexing and time division multiplexing

• explain the line coding techniques used in various broadband transmission

• analyze the operation of typical data compression programs

• explain the operation of source, medium and detector of a fiber optic transmission system as well as the OC systems used

• analyze a fiber optic transmission system using a link budget

• explain and analyze a typical public telephone network system

• explain and analyze a cellular telephone system

• explain the difference between PCS and GSM cellular systems

• explain the operation of VoIP telephony

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
Midterm Exam 30%
Technical Report 20%
Class Presentation 20%
Final Exam 30%

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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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. If you wish to request any special accommodations for any courses in which you are enrolled, contact the Student Disabilities Office at 353.3721.

**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 cancellation 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.