SYLLABUS: ET788 Introduction to Digital Signal Processing, 4 Credits

COURSE DESCRIPTION: This course will deal with the topics of spectral representation of periodic and non-periodic analog signals followed by discrete sampling and aliasing and how it relates to Nyquist sampling theorem. The z-transform will be introduced as the required mathematical tool along with an introduction to MATLAB and its associated DSP tool box. Spectral analysis of digital signal will be accomplished using these tools. Convolution and digital filtering will also be covered. Lab. Prereq: ET 680 Communications and Fields or equivalent.

REQUIRED TEXT: DSP First, second edition
James H. McClellan
ISBN-13: 978-0136019251
ISBN-10: 0136019250

SOFTWARE: **Matlab, available for UNH students to download and installed in P114**

INSTRUCTOR: Adjunct Professor, Erich C. Whitney

Erich.Whitney@unh.edu
Office: none

OFFICE HOURS: **By arrangement, please contact through Canvas or UNH email.**

LECTURE: **Attendance is required to succeed. Bring textbook to class. Take notes.**
A 2" 3-ring binder is recommended for your course material.
If you have a laptop or a tablet, please install Matlab on it and bring it with you to class or pair up with a classmate for in-class Matlab exercises.

If absent, be sure to check for assignments/handouts.

ASSIGNMENTS: **Homework assignments will be posted in MyCourses along with date the problem sets are due. Solutions will be posted in MyCourses once the solutions are posted late work will not be accepted. Students who attempt to find an illegal copy of the solution manual on-line and copy the solutions will get a zero on the assignment. Caution, it is easy to detect students using the solution manual as there are MANY errors in the document.**

Two weeks' notice of exams will be given, if a student needs to miss an exam for any reason the instructor must be notified prior to the class the exam is given. If an exam is missed without prior notification the student will receive a grade of zero (0) no exceptions. In the case of extreme circumstance when an exam is missed without prior notification the student MUST contact the instructor within 24 hours of the missed exam and submit a written document of why the exam was missed. The instructor will determine if a modified exam will be given in place of the missed exam.

Exams will be given during lecture time, if a student needs modified exam accommodations the instructor requires a document from the learning center stating accommodations *(See disability policy of Syllabus).* Any student who needs exams proctored outside of normally scheduled lecture room must make their own arraignments prior to the scheduled exam.

GRADING: Homework ………………………………………….. 40%
        Hour Tests (2) ………………….………………….... 40%
        Final Exam (comprehensive, no exemptions) ……….. 20%

COMMENTS: If you have questions during the semester, please feel free to ask instructor.
        If you are experiencing difficulty, please let the instructor know early.

ACADEMIC HONESTY:

In the preparation and presentation of any assigned work-including examinations, tests, quizzes, term papers, reports, themes and other written or oral exercises-every student shall conform to a strict standard of academic honesty. Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard. In all assignments, students must acknowledge the words and/or ideas of others taken from print or electronic media, whether a direct quotation or a paraphrase; any omission of this is dishonest. This includes copying the text book's solution manual on homework assignment. Any homework submitted that suspiciously looks similar or identical to the publisher's solution manual will receive a grade of 0. Cheating on examinations or tests consists of knowingly giving, receiving or using-or attempting to give, receive or use-unauthorized assistance during an examination or test. A faculty member may record a grade of "zero" for any assignment on which a student has plagiarized or cheated. For repeat offenses within a single course, the faculty member may record a grade of "F" for the course. Violations of this policy in multiple courses may result in dismissal from the College.

FOR STUDENTS WITH DISABILITIES:

Any student who feels s/he may need an accommodation based on the impact of a disability should contact the UNHM Disability Services Coordinator to discuss your specific needs. Please contact Jenessa Zurek Jenessa.Zurek@unh.edu *to coordinate reasonable accommodations for students with documented disabilities.*

TAC of ABET Student Outcomes Criteria #3

Criterion 3 (1 – 5)

For baccalaureate degree programs, these student outcomes must include, but are not limited to, the following learned capabilities:

(1) An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;

(2) An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;

(3) An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;

(4) An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and

(5) An ability to function effectively as a member as well as a leader on technical teams.

Discipline Specific Educational Outcomes
Electrical Engineering Technology
Lead Society: Institute of Electrical and Electronics Engineers

The UNH-M Electrical Technology program will prepare graduates with the skills necessary to enter careers in the design, application, installation, manufacturing, operation and/or maintenance of electrical/electronic(s) systems.

EET Outcomes

a) The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers, and engineering standards to the building, testing, operation, and maintenance of electrical/electronic(s) systems; and
b) The application of natural sciences and mathematics at or above the level of algebra and trigonometry to the building, testing, operation, and maintenance of electrical/electronic systems.
c) The ability to analyze, design, and implement one or more of the following: control systems, instrumentation systems, communications systems, computer systems, or power systems;
d) The ability to apply project management techniques to electrical/electronic(s) systems; and
e) The ability to utilize differential and integral calculus, as a minimum, to characterize the performance of electrical/electronic systems.