A. COMMUNICATING WITH THE PROFESSOR

The preferred method for communication is through ACC E-mail. I will be available to meet with anyone who contacts me to set up an appointment via e-mail. If you need to speak with the Program Chair please email spedigo@alvincollege.edu to set up an appointment.

Students will generally receive a response via e-mail within 24 hours on weekdays if their e-mail is sent before 2:00 p.m.

B. COURSE DESCRIPTION

Discuss individually the concepts, terminology and techniques of Evoked Potential (EP) recording with testing modalities of visual, auditory and somatosensory systems. An overview of computers and EP instrumentation will be discussed, as well as the application of EP testing in the operating room, and the computation and collection of normative data.

C. METHODOLOGY

This course is a hybrid course consisting of two (2) lecture hours. 50% of the lecture is delivered as Web-based instruction, online discussion, online communication, learning lab testing, and online submission of assignments conducted through My Blackboard. The other 50% will be conducted on campus in room S246 and will meet once a week. Classroom time is used to demonstrate knowledge of lecture material in a hands-on approach with practice of all modalities on volunteer subjects. Unit exams will be administered during scheduled classroom times (see class schedule).

D. PRE-REQUISITES/CO-REQUISITES:

ENDT1345, ENDT1350, PSGT1310, ENDT1463, (pre-requisite)
ENDT2425, ENDT2463 (co-requisite)

E. CLASS ATTENDANCE POLICY

Students missing more than 2 classes will have their final score reduced by one letter grade for each additional absence.

F. TEXTBOOKS

G. COURSE GOALS, OBJECTIVES AND COMPETENCIES

COURSE OUTLINE

Unit 1: Introduction to EP’s and Computer Technology

Unit 2: Technical Aspects of Evoked Potentials

Unit 3: Auditory Evoked Potentials

Unit 4: Visual Evoked Response

Unit 5: Somatosensory Evoked Response (upper and lower)

Unit 6: Other Related Applications

UNIT 1 OBJECTIVES

Upon completion of this unit, the student will be able to:
1. Relate terminology used in EP testing
2. Demonstrate knowledge of computer operation as it relates to EP testing
3. Relate signal averaging as it relates to EP data collection

UNIT 2 OBJECTIVES

Upon completion of this unit, the student will be able to:
1. Apply principles and concepts of EP instrumentation to the recording by understanding analog to digital conversion, including
   a. amplitude resolution
   b. sampling rate, analysis time
   c. sampling interval (dwell time)
2. Relate the effects of stimulus and recording parameters on EP waveforms
3. Relate the difference in equipment protocols for each of the modalities
4. Set-up EP equipment to the desired protocols for each modality

UNIT 3 OBJECTIVES

Upon completion of this unit, the student will be able to:
1. Relate the anatomy, physiology and pathology of the auditory system, nerves and nerve pathways.
2. Relate the principles of measuring waveforms in brainstem auditory evoked potential studies
3. Relate the criteria for significant changes occurring during brainstem auditory evoked potential recordings
4. Relate the effects of medications and other physiological variables on test results
5. State the clinical correlations of brainstem auditory evoked potential abnormalities
6. Describe artifacts encountered during brainstem auditory evoked potential studies and basic techniques for trouble shooting
7. Identify absolute and interpeak latencies of BAEP waveforms and state how they are used
UNIT 4 OBJECTIVES

Upon completion of this unit, the student will be able to:
1. Relate the anatomy, physiology and pathology of visual system, nerves and nerve pathways
2. Relate principles of measuring waveforms and distances used in visual evoked potential studies
3. Relate the criteria for significant changes occurring during visual evoked potential recordings
4. Relate the effects of medications and other physiological variables on test results
5. State the clinical correlations of visual evoked potential abnormalities
6. Describe artifacts encountered during visual evoked potential studies and basic techniques for trouble shooting
7. Identify absolute latencies of VEP waveforms and how they are used

UNIT 5 OBJECTIVES

Upon completion of this unit, the student will be able to:
1. Relate the anatomy, physiology and pathology of the somatosensory, nerves and nerve pathways
2. Relate the principles of measuring waveforms and distances used in somatosensory evoked potential studies
3. Relate the criteria for significant changes occurring during somatosensory evoked potential recordings
4. Relate the effects of medications and other physiological variables on test results
5. State the clinical correlations of somatosensory evoked potential abnormalities
6. Describe artifacts encountered during somatosensory evoked potential studies and basic techniques for trouble shooting
7. Identify absolute latencies and amplitudes of SEP waveforms and how they are used

UNIT 6 OBJECTIVES

Upon completion of this unit, the student will be able to:
1. Relate the principles of measuring waveforms and distances used in intraoperative evoked potential studies
2. Relate the criteria for significant changes occurring during intraoperative evoked potential recordings
3. Relate the effects of medications and other physiological variables on IOM test results
4. Describe artifacts encountered during evoked potential studies and basic techniques for trouble shooting during intraoperative monitoring
COURSE COMPETENCIES

Upon completion of this course, the student will be able to:

1. Demonstrate understanding of basic computer applications to EP technology.
2. Describe theoretical basis of evoked potentials
3. Demonstrate ability to perform evoked potentials in the modalities Visual, Auditory Brainstem and Somatosensory on volunteer human subjects.
5. Demonstrate knowledge of the anatomy and physiology of the related test procedures.
6. Apply electrodes accurately with respect to each modality tested.
7. Become familiar with equipment protocols in each of the modalities.
8. Identify and measure important data from EP waveforms.
9. Make necessary calculations of amplitudes, amplitude ratios, latency, interpeak latencies, and/or conduction velocities, for interpretations.
10. Recognize and remedy artifacts on the EP.
11. Utilize the appropriate stimulus for each modality.
12. Have an understanding of published normative data, for comparison and evaluation of normal versus abnormal

H. ASSIGNMENTS, EXAMS & GRADING SUMMARY

1. ASSIGNMENTS
   Assignments are to be completed and turned in on the date and time specified in the class schedule found under course content on Blackboard. It is the student’s responsibility to ensure that the assignment is turned in on the date and time specified. Ten (10) percent will be deducted on the assignment for every day (24 hour period – week or weekend) the assignment is late. An assignment is considered late if it is 1 minute late as recorded within the MyBlackboard system.

2. UNIT EXAMS
   An exam will be given at the end of each unit as well as a comprehensive final exam. Unit exams will be given during scheduled classroom times. Any missed exam times will be made up at a time decided upon by the instructor if a medical excuse or family emergency can be shown. In the case of a family emergency advanced notice must be given prior to the test time expiring (preferably via email) to an ACC Electroneurodiagnostic Program Instructor. In the event of an unexcused missed exam no makeup will be given. There will be no exceptions to this rule.

3. BLACKBOARD DISCUSSIONS
   During each week there will be various discussion topics assigned. Most will correlate with weekly readings or special topics. Students will be expected to participate on each topic. A minimum of one well thought and written post for each topic will be required. Credit will not be given for a post if it is unsatisfactory. This will replace classroom participation and should be completed before Friday at 6:00 p.m. each week.

4. COMPREHENSIVE FINAL EXAM
   During finals week a comprehensive final will be given. The Final Exam will be at the college during scheduled Laboratory time on the date posted on Blackboard (see class schedule).
Your grade is based on the average you receive on all course assignments and activities. Always notify your instructor if you are concerned with your grades or your status in the class.

I.…..Incomplete. No Incompletes or "I" grades will be given except for extreme circumstances. If an "I" grade is assigned and the course work is not completed by the pre-arranged time limit, this grade will convert to an “F.”

W….Withdrawal. Students who file withdrawal requests by the published deadline will receive a grade of “W.” If a decision is made to withdraw, the student must start the process at the Enrollment Services Center, room A-100, before the deadline. Failure to withdraw may result in a grade of F.

I. LATE COURSE WORK POLICY- Any missed exam will be made up at a time decided upon by the instructor [F]. a medical excuse or family emergency can be shown. In the case of a family emergency advanced notice must be given prior (preferably via e-mail) to any ACC Electroneurodiagnostic Program Instructor. In the event of an unexcused missed exam or presentation no make-up will be given. There will be no exceptions to this rule.

J. EXAM POLICY- There will be unit exams given at the end of unit 3, unit 4, unit 6 and a comprehensive final at the end of the semester. These exams will be over material covered in each unit and may contain multiple choice, short answer, matching and essay questions.

K. EXPECTATIONS

1. Students are expected to obtain required textbooks before the end of the first week of class.

L. ACADEMIC SUCCESS AND SUPPORT SERVICES

1. Computers are available for use by all registered ACC students in many of the 23 ACC/PCC computer labs, including the Cyber Lab, room A-173. Cyber Lab hours are: Mon-Thurs. 8:00 a.m.- 8:00 p.m., Friday 8:00 a.m. – 5:00 p.m. and Sunday 4:00 p.m.- 8:00 p.m. Call 281-756-3544 for more information about all ACC computer labs. Students will not be penalized if there is interruption in MyBlackboard, if the instructor is notified of such an issue from the Distance Education Department.

2. The ACC Library website is: http://www.alvincollege.edu/library/default.htm

3. The ACC Learning Lab and Writing Center, A-235, is for tutoring, exams, and additional computer access: http://www.alvincollege.edu/resources/learning _lab.htm

4. MyBlackboard-Any technical problems or issues with MyBlackboard should be directed to the Distance Education Department at de@alvincollege.edu. Include your first and last name,
student ID number and a description of the problem.

5. WEBACCESS, Passwords or Computer Labs-contact the IT Dept. Help Desk at 281-756-3544

M. AMERICANS WITH DISABILITIES ACT- ACC complies with ADA and 504 Federal guidelines by affording equal access to individuals who are seeking an education. Students who have a disability and would like classroom accommodations must register with the Office of Disability Services, A 136, (281)756-3533. Instructors are not able to provide accommodations until the proper process has been followed.

N. CODE OF ACADEMIC INTEGRITY AND HONESTY- Students at Alvin Community College are members of an institution dedicated to the pursuit of knowledge through a formalized program of instruction and learning. At the heart of this endeavor, lie the core values of academic integrity which include honesty, truth, and freedom from lies and fraud. Because personal integrity is important in all aspects of life, students at Alvin Community College are expected to conduct themselves with honesty and integrity both in and out of the classroom. Incidents of academic dishonesty will not be tolerated.