Eastern Illinois University
CDS 4500, Neurological/Embryological Aspects of Communication

1. Catalog Description
   a. CDS 4500
   b. Neurological/Embryological Aspects of Communication
   c. (3-0-3)
   d. F
   e. Neuro/Embryo
   f. Course Description: Study of embryological development and basic neurological processes underlying communication.
   g. Prerequisite: Admission to the major and CDS 2500 or permission of the department chairperson.

2. Objectives of the Course
   a. Students will acquire knowledge of basic embryological development related to human communication.
   b. Students will acquire knowledge of basic neurological processes underlying communication.
   c. Students will acquire knowledge of cranial nerve function relative to communication.
   d. Students will acquire knowledge of brain/behavior relationships pertinent to communication.
   e. Students will acquire knowledge of current research related to the neurology of learning.

   This course is writing active.

3. Outline of Course: Course will meet for 150 minutes per week for 15 weeks.
   Week 1: Brain-Behavior Relationships: Cortical Level
   Frontal Lobe
   Temporal Lobe
   Parietal Lobe
   Occipital Lobe
   Insula

   Week 2: Brain-Behavior Relationships: Subcortical Level
   Basal Ganglia
   Cerebellum
   Substantia Nigra
   Dentate Nucleus
   Thalamus

   Week 3: The Triune Brain
   Ontogeny Recapitulates Phylogeny
   R-Complex
   Limbic System
   Neocortex
Week 4 & 5: Sensory-Motor Systems
   Dorsal Horn
   Anterior Horns
   Somesthetic Cortices
   Pyramidal System

Week 6 & 7: Neurobiology of Memory
   Hippocampus
   Posterior Cingulate
   Amygdala
   Basal Forebrain
   Ventromedial Prefrontal Cortices

Week 8 & 9: Organization Of Language
   Brain Imaging
   Wernicke-Geschwind Theory
   Emotional Intelligence
   Angular Gyrus
   Supramarginal Gyrus

Week 10: Execution of Speech: Cranial Nerves

Week 11: Speech Perception/Feedback Loops

Week 12: Brain- Based Learning: Research from the Decade of the Brain

Week 13: Gametogenesis

Week 14: Embryological Development of the Orofacial Complex

Week 15: Embryological Development of the Human Nervous System

Evaluation Procedures: Students will be evaluated and assigned grades on the basis of their performances as follows: examinations (70%), group project (20%), and class participation (10%). The group project will include generation of a written document addressing a topic associated with a designated structure or function of the nervous system.

4. Implementation:
   a. This course may be assigned to any CDS faculty member. Initially the course will be taught by Richard D. Jacques, Ph.D. Associate professor in the Dept. of Communication Disorders & Sciences.

   b. Project materials will be available on reserve.


   d. Fall 2001
5. **Rationale:**
   a. **Purpose:** To teach students neurological and embryological processes of human communication.
   
   b. **Justification of level:** Course offered at the senior level for the following reasons: 1) undergraduate knowledge including anatomy (CDS 2500) is prerequisite to this course, and 2) this course content is prerequisite to understanding graduate courses focusing on specific communication disorders.
   
   c. **Similarity to existing courses:** This course will replace the current CDS 4500. It is expanded by 1 semester hour to allow more in-depth presentation of course objectives. The American Speech Language & Hearing Association espouses a thorough knowledge base of normal communication processes prior to the study of disorders. There is no other course that exclusively examines the neurology and embryological development of human communication systems.
   
   d. **Requirement or Elective:** Requirement for CDS majors

6. **Community College Transfer:** Community College courses will not be judged equivalent to this course.

7. **Date approved by CDS department:** 11-2-00

8. **Date approved by College of Science Curriculum Committee:** 12-1-00

9. **Date approved by CAA:** 1-11-01