SYLLABUS

Course Number: CSD 464:

Course Title: Genetics and Communication Disorders

Credits: 3:3

Prerequisites: CSD 306 Phonetics, CSD 307 Speech & Hearing Science, CSD 308 Language & Speech Development, CSD 309 Anatomy & Physiology of Speech & Hearing, and CSD 344 Introduction to Audiology

For Whom Planned: Elective for upper level undergraduates who have been accepted into the Communication Sciences and Disorders major.

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Office Hours: T-Th, 8:30-9:30, 11-12
and by appt.

CATALOG DESCRIPTION:

An examination of the genetic bases of communication disorders, including environmental interactions, and an overview of the embryology of the organs of communication, Mendelian and non-Mendelian genetics, and genetic counseling.

Student Learning Objectives: Upon completion, students will be able to:

1. Evaluate pedigree information to identify inheritance patterns and estimate risk factors for individuals within the family.
2. Construct pedigrees using appropriate symbols.
3. Propose potential dysmorphologic sites within the non-visible auditory system that may be associated with particular craniofacial anomalies.
4. Construct an embryological timeline for craniofacial and auditory development.
5. Compose a research paper using appropriate genetic terminology to describe current genetic tools and disorders.
6. Evaluate photos and case history in order to identify the most common genetic disorders affecting communication.
7. Judge when to make appropriate referrals for genetic counseling.
8. Assess the environmental interaction with the genome in communication disorders.

Teaching Strategies:

Classes will consist of question/answer, discussion, guest lectures, hands-on group work, and lecture. Students will be expected to arrive in class having read the appropriate material and ready to discuss the topic and/or answer questions.

Evaluation Methods and Guidelines for Assignments:

A. Three 100-point tests will comprise 60% of the final grade. Exam format will be essay. (SLO #1, 2, 3, 5, 6, 7, 8).

B. A paper will also be assigned, worth 20%. The topic must be approved by the professor, and should be on a genetic disorder involving communication. The paper will be graded on two areas. "Content" includes the choice of subject and coverage of the chosen area. The flow of the paper, introduction, factual contents and validity of conclusions drawn are considered. The selection of references (whether appropriate, up-to-date, and representative) is also important. The "details" of the paper include the writing style and presentation of the problem, independent of subject matter. The use of references will be evaluated as to: (a) adequate use of references, (b) appropriate credit to original work, (c) ease with which the references are included in the review. After completion of the paper, students will present their papers in class (in shortened version) during the last two weeks of class. (SLO # 5,6)

C. Students will construct a family pedigree (their own or an unnamed other) that shows 4 traits, using appropriate symbols (no names). The pedigree chart will be worth 10% of the final grade. (SLO #2)

D. Students will construct an embryological timeline for craniofacial and auditory development suitable for future reference during clinical work. This embryological timeline will be worth 10% of the final grade. (SLO #4)

E. **Grading scale for assignments**: 93-100= A, 90-92= A-, 88-89=B+, 83-87= B, 80-82=B-, 78-79=C+, 73-77=C, 70-72=C-, 68-69=D+, 63-67=D, 60-62=D-.

F. Guidelines and requirements for all evaluation methods and assignments will be available on Blackboard, as well as discussed during the first class period.

Required Text:

Gerber, Sanford E.(Ed.) (2001). *Handbook of Genetic Communicative Disorders*. Elsevier Press.

Recommended Texts:

Shprintzen, Robert J. (2001). *Syndrome Identification for Audiology: an illustrated PocketGuide*. Singular/Thomson Learning.
Shprintzen, Robert J. (2000). *Syndrome Identification for Speech-Language Pathology: an illustrated PocketGuide.* Singular/Thomson Learning.

Web-tutorials

http://www.vh.org/pediatric/provider/pediatrics/ClinicalGenetics/Contents.html

Attendance Policy:

A. Class attendance is necessary to master the material presented. For missed classes, students will have to rely on the support of other students for class notes.

B. Attendance at exams is mandatory; a student may be excused if s/he calls the instructor **before** the exam with a medical reason, and confirms with a physician's note. In the event that a student is excused from an exam, the make-up exam will be more difficult than the regular class exam. If you do not call and do not attend the exam, you will receive an automatic zero on the exam.

Academic Integrity Policy: Each student is required to sign the Academic Integrity Policy on all major work submitted for the course. Refer to the UNCG Undergraduate Bulletin or online at: http://studentconduct.uncg.edu/policy/academicintegrity/

COURSE OUTLINE: Genetics & Communication Disorders

Week 1	Introduction, Survey, Rationale Role of Clinician in Genetic Referral
Week 2	Embryological development of the nervous system
Week 3	Pre & post-natal craniofacial development (Chapter 2)
Week 4	Development of the Outer Ear and Hyoid Bone (Chapter 3) Development of the Inner Ear
Week 5	Dysmorphology (Guest speaker)
Week 6	**Exam #1**
Week 7	Basic Laws of Inheritance (Web tutorial) Examination of Pedigrees
Week 8	Multifactorial Inheritance (Web tutorial) Mitochondrial Inheritance
Week 9	Behavioral Genetics & Learning Disorders (Chapter 8)
Week 10	Ethics. Legal & Social Implications (Chapter 9)
Week 11	**Exam #2**
Week 12	Prenatal Diagnosis/Genetic Counseling (Web tutorial)

Week 13	Treatment, Prevention & Translational Research (Chapter 10)
Week 14	Student Presentations on disorders
Week 15	Student Presentations on disorders/ **Genetics Paper Due**
Exam Week	**Exam #3**