COURSE OUTLINE

SHS 733

COCHLEAR IMPLANTS

Fall 2015

Instructor: Kimberly Ward, Au.D., CCC-A., F-AAA
Office: 601-266-5257
Kimberly.Ward@usm.edu
Office Hours: Monday 1:00-3:00, Friday 11:00-12:00

Text: Programming Cochlear Implants
Authors: Jace Wolfe & Erin C. Schafer

Course Objectives:
1. The student will develop an awareness of the historical development of cochlear implant technology, including early FDA trials through current multi-channel devices.
2. The student will understand the issues related to candidacy selection, criteria, and the team process involved in cochlear implantation.
3. The student will gain an awareness of the basic surgical procedures necessary for successful completion of cochlear implantation.
4. The student will gain the skills necessary to appropriately evaluate potential implant candidates including infants, children, and adults and how to interpret test results.
5. The student will acquire knowledge of current implant systems, including their advantages and disadvantages.
6. The student will understand the various client specific procedures involved with programming and MAPping of the cochlear implant system.
7. The student will understand the importance of developing and implementing a multi-disciplinary intervention and rehabilitation program for implanted clients of all ages.
8. The student will obtain knowledge on multiple bone anchored systems, candidacy criteria, functions, as well as their advantages and disadvantages.
9. The student will compare and contrast the advantages of the cochlear implant and bone anchored systems.
10. The student will obtain knowledge on the auditory brainstem implant and its candidacy criteria.
11. The student will become familiar with the differing speech coding strategies and the appropriate patients in which to apply and use each specific strategy.
12. The student will be able to demonstrate troubleshooting techniques and counseling techniques as related to cochlear implants and bone anchored systems.
13. The student will acquire an understanding of bimodal and binaural cochlear implantation and associated advantages and disadvantages.
14. The student will acquire an understanding and be able to demonstrate appropriate speech perception testing that is used while evaluating for cochlear implant candidacy.

Course Requirements and Formative Evaluation Procedures
1. Each student is responsible for all material presented in class, including all handouts and assigned readings.
2. Each student is expected to attend class regularly and to participate in class discussions.

3. Each student will take two examinations, making up 75% of your grade. Examinations will consist of true and false, fill in the blank, short answer, and discussion questions covering knowledge of material presented in class, from assigned readings, and handouts. Make up examinations are scheduled at the discretion of the instructor.

4. Each student will be responsible for a presentation one of bone anchored systems available today. These presentations should be 15-20 minutes in length and should be researched and referenced appropriately using peer-reviewed articles and internet based information such as a manufacturer websites. Topics must be presented to the instructor prior to development of presentation. The presentation will account for 5% of your final grade.

5. Each student will create a glossary of cochlear implant terminology using the provided list. Additional terms may be added to the list during the semester, at instructor’s discretion. (See attachment). The grade on the attachment will be combined with the annotated bibliography grade for a total of 5%.

6. Each student will compile an annotated bibliography. (See attachment). The bibliography grade will be combined with the glossary grade to account for 5% of your final grade.

7. Quizzes will be given throughout the semester and will account for 15% of your total grade. Some quizzes will be announced and others will not. Students are expected to be current on knowledge discussed in class.

8. Grades on each of the examinations and the projects will be averaged to determine the final grade in the class. The grading scale will be as follows:
   - A= 90-100 points
   - B= 80-89 points
   - C= 70-79 points
   - D= 60-69 points
   - F= Below 60 points

All learner outcomes fulfill the criteria for the following American Speech-Language-Hearing Association (ASHA) standards. To view specific information on these standards, visit www.usm.edu/shs/audio or www.usm.edu/shs/speech.htm and click on KASA competencies. Competencies covered in this class: IVB: B1, B2, B3, B4, B5, B6, B9, B11, B13, B15, B16, B17, and B21; IVC: C1, C3; IVD: D1, D2, D3, D6, D7, D8, D10, D11, D12, D13, D14, D15, D16, D17; IVE: E1, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, and E18

**Remediation:** If any student does not have a satisfactory average grade of 80% or higher, the student may contact the instructor for remediation. Remediation may include, but is not limited to, one or more of the following:
1. Additional assigned readings on topics discussed in class.
2. Additional course and practicum assignments as deemed necessary.
3. Submit chapter outlines from textbook on areas of difficulty and prepare study questions.

**Americans with Disabilities Statement**
If a student has a disability that qualifies under the Americans with Disabilities Act (ADA), he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

Address:
ANNOTATED BIBLIOGRAPHY
An annotated bibliography will be created and will be due during the last week of classes. There will be no late collections accepted and should be e-mailed to Kimberly.Ward@usm.edu by midnight on the due date.

Your annotated bibliography should center around Cochlear Implants and should contain annotated bibliographies for at least 15 articles.

An annotated bibliography is a list of citations to articles or books that is followed by a brief descriptive and evaluative paragraph (the annotation). The purpose of the annotation is to inform the reader of the relevance, accuracy, and quality of the sources cited. The annotated bibliography should be organized using the APA format. (Note: You must read the entire article/document in order to fully evaluate the sources and findings of the author(s). Annotated bibliographies should be descriptive, critical, are not abstracts and should not be treated as such.)

Items that should be included in each annotated bibliography include:

1) Summary of article/document
2) Strength(s) of article
3) Weakness(es) of article
4) How will I continue to use this source? (include page numbers and quotations if necessary)

Your annotated bibliographies entries will be evaluated using each of the 4 criteria listed above. Be sure to be thorough in your evaluation but please limit your entries to between 150-200 words.

Example of an Annotated Bibliography entry:


Summary:
Lane and Grodin present an argument that is mostly in favor of the “Deaf world” and against cochlear implants that would eradicate deaf culture. The authors question if deafness can even really be considered a disability, since most deaf people can function fairly independently despite the language barrier.

Strengths:
The source questions the effectiveness of cochlear implants has a clear outline of information contains several references to academic studies and uses similies to illustrate main points. Also uses acknowledgement and response.

Weaknesses:
The source uses some comparisons that are slightly far-fetched and seems to be more biased (in favor of preserving deaf culture opposed to cochlear implants). It is a fairly dated article and the science of implants has improved.

How I will use this source:
Quotations: pages 234, 235, 239
Used to refute their claims that implanting children with cochlear implants is taking away their deaf culture

For further questions/help, please visit the Purdue OWL online site or contact the instructor.
Vocal formants
Cochlear Implant
Instantaneous Input Dynamic Range
Stimulation Rate
Receiver
Microphone
Transmitting Coil
Percutaneous
Pulsatile Stimulation
Monopolar stimulation
Speech coding strategy
CIS
SAS
Enlarged Vestibular Aqueduct Syndrome
M level
Telemetry
HINT
ESP
Maxima
Bimodal
Fidelity 120
ADRO
Pulsewidth
Frequency allocation table
SmartSound
Dynamic range
Input dynamic range
Pitch Steering
T level
Electrode Array
Speech Processor
Transcutaneous
Simultaneous Stimulation
Channel
Bipolar stimulation
SPEAK
ACE
N of M
MAP
C level
T-NRT
CNC
LNT
Baha
Perimodiolar electrode
Maplaw
LING sounds
Current level
Speech bursts

COURSE OUTLINE
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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>August 21</td>
<td>Introduction/History of Cochlear Implants</td>
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<tr>
<td>August 28</td>
<td>Candidacy- Criteria and Evaluation</td>
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<tr>
<td>September 4</td>
<td>Cochlear Implant Function, Design/Speech Coding Strategies</td>
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<td>September 11</td>
<td>Programming/Surgery</td>
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<td>September 18</td>
<td>Bimodal/Bilateral Use/Baha</td>
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<td>September 25</td>
<td>Case presentations</td>
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<td>October 2</td>
<td>Midterm</td>
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<td>October 9</td>
<td>Auditory (Re)Habilitation: Adults</td>
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<td>Communication modality</td>
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<td>Processes of auditory development</td>
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<td>Intervention tools and other resources</td>
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<td>Role of patient/family</td>
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<td>Factors that affect outcomes</td>
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<td>Expectations of patient, family</td>
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<td>October 16</td>
<td>Auditory Rehabilitation: Children</td>
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<td>Stages of auditory development</td>
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<td>Auditory and communication benchmarks and “red flags”</td>
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<td>Intervention tools and other resources</td>
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<td>Role of parent, family</td>
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<td>Academic issues</td>
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<td>Factors that affect outcomes</td>
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<td>Expectations of family, clinician</td>
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<td>October 23</td>
<td>Hands on programming lab</td>
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<td>November 6</td>
<td>COCHLEAR: Sara Causin</td>
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<td>November 13</td>
<td>ADVANCED BIONICS: Anna Eason</td>
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<td>MED EL: Allison Kastner</td>
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<td>Annotated Bibliographies due</td>
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<td>Glossaries due</td>
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<td>November 27</td>
<td>THANKSGIVING HOLIDAY-NO CLASS</td>
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<td>Final examination</td>
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