



SPPA331-001

Basic Audiology

Fall 2016

BULLETIN COURSE DESCRIPTION

Survey of the normal auditory system and the pathologies that affect its functioning. Includes the physics of sound, standard reference levels, and auditory perception. Methods of administering and interpreting pure tone, speech threshold, and speech recognition tests are presented in classroom and lab settings.

Darah Regal, AuD, CCC-A
Assistant Professor of Audiology



Department of Speech-Language Pathology & Audiology

Course: SPPA 331 Basic Audiology Fall 2016 M,W,F - 9:30 -10:20a.m. BH 183
3 Semester Credits

Instructor: Darah Regal, AuD., CCC-A
Assistant Professor of Audiology
Bell Hall 114, Office hours will be posted on my office door
Phone: 471-3469 Office
E-mail - dregal@andrews.edu

Required Textbooks: Martin, F. N. Introduction to Audiology, Twelfth edition (2015). Englewood Cliffs, N. J. Prentice Hall, Inc.

For ISBN and price information, please see the listing at the Andrews University Bookstore www.andrews.edu/bookstore.

Course Description: A survey of the normal auditory system, its anatomy and physiology, and the pathologies that affect its functioning. Areas of study include the physics of sound, standard reference levels, and auditory perception. Methods of administering and interpreting pure tone and speech threshold tests are presented.

Course Hour Description: This course is offered for three credits; therefore, it is expected that you will spend three hours per credit (nine hours) per week on this class, every week, during the 15 week semester. There will typically be three 50 minute classes per week. The remaining time will be completed outside the classroom. The remaining six hours should be used for reading the textbook, completing projects, studying/reviewing notes for quizzes and exams. Consistent efficient and effective studying every day, except Sabbath, will be very beneficial.

Course Objectives: By the end of this course, you will be able to:

1. Identify the structures of the auditory system.
2. Discuss the transmission of sound through the auditory pathway.
3. Explain the transmission of sound through air.
4. Learn simple tests of hearing using the tuning fork.
5. Administer the basic battery of auditory tests.
6. Correctly interpret pure tone threshold results.

This course meets the following Audiology KASA standards:

Standard IV-A: Foundations of Practice-A1, A2, A4, A8, A10, A12, A13, A21, A23, A24, A25

Standard IV-B: Prevention and Identification-B1, B3, B5

Course Requirements:

1. **Class Attendance:** Record will be taken during the first five minutes of class. Promptness is vitally important to the continuity of class discussion. If you find you will be unable to attend



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class, please notify the teacher **prior to the class** to make arrangements for making up the work and obtaining handout material. Three absences will be allowed (excused or unexcused). Absences beyond that will jeopardize your grade 2% per day missed after the third day. Three tardies equals one absence. Prolonged illness with physician explanation will be dealt with individually.

2. **Quizzes:** There will be either a take home quiz or in class quiz each week - 10-20 points each.
3. **Examinations:** There will be four examinations throughout the semester worth 75 - 150 points each.

Quizzes missed due to an excused absence will be prorated. Tests missed due to an excused absence may be made up within three days after the absence. Exams missed due to illness require a physician note verifying the illness to make up the exam.

4. **Laboratory Assignments:**

A. **Screening:** Each student will perform 10 screening (20 dB HL at 250,500, 1000, 2000, 3000, 4000, 6000, and 8000 Hz) audiograms using the portable audiometer. You will be assigned a day to use the screener or there will be a sign-up sheet. You will develop your own screening form with all necessary information. It is due at the beginning of class on the date noted in the course outline.
Each screening is worth 5 points - 50 points total.

B. **Pure Tone Tests:** Each student will perform 4 pure tone air and bone conduction threshold tests. Two patients can be class members, two must be non-class/non SPLAD members. Refer to chapter 4 in the textbook and class notes for instructions. In the comments section on the audiogram, **summarize** the type and degree of loss, if any. Audiograms are due at the beginning of class on the date noted in the course outline. Please attach the RUBRIC labeled Pure Tone Lab with your audiograms.
Each Pure Tone Threshold test is worth 10 points - 40 points total.

C. **Speech Tests:** Each student will perform 4 SRT and word discrimination tests. Two patients can be class members, two must be non-class/SPLAD major members. Refer to chapter 5 in the textbook and class notes on proper procedure. These may be added to the pure tone audiogram done above if it is on the same person. **Summarize** your results on the bottom of the audiogram. This assignment will be due at the beginning of class on the date specified in your course outline. Please attach the RUBRIC labeled Speech Lab with your audiograms. **Each speech test is worth 10 points - 40 points total.**

E. **D. Research:** You will be assigned a hearing disorder to research. Submit a three to five page report about the disorder including signs/symptoms, etiology, medical management, typical hearing results (type and degree) and history/progression of the disorder. History would include, progression of the disorder and the effect on the anatomy, who discovered the disorder, different medical management procedures that have been tried to correct the



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disorder and typical remediation techniques used currently. This paper should include at least 6 references including books and peer-reviewed articles. At a minimum, 5 of the references should be cited properly within the body of the paper. **DO NOT** cut and paste for this project. See plagiarism policy in the Andrews University Bulletin. If you do not understand what plagiarism includes, please schedule an appointment with the writing center for proper citation of articles, books, class notes and internet sources. Properly site sources and include a complete bibliography. The bibliography should include at least 6 sources. Please attach the RUBRIC labeled Basic Audiology Research with your paper. - 45 points

Total Lab Points - 175 Points

LATE POLICY

Assignments may only be turned in during class time. Assignments will no longer be accepted in my in-box, handed to me outside of class or placed in my office. There will be a folder and a turn-in sheet to sign when the assignment is placed in the folder during class. If you do not have your assignment during class it may be turned in during a subsequent class period for the following discounts: 1. One class period late during the same week 10%, 2. One class period late over a weekend 15%, 3. Two class periods late 25%, 4. Three class periods late 50%, NO assignment accepted four class periods after the due date. **FOR EXAMPLE:** If an assignment is due on a Monday and it is worth 50 points then if the assignment is submitted during class on Monday, placed in the folder, and signed – full credit is possible. If the assignment is submitted during class on Wednesday, placed in the folder and signed – a 10% discount on the score earned will be deducted (45 points is the highest grade that can be earned). If the assignment is submitted on Friday – (maximum points possible would be 37.5 points), Submission on the following Monday (maximum points possible 25). No assignments accepted after the fourth class period. If you are not going to be in class, it is your responsibility to have someone in the class submit your assignment and sign their name. No assignments will be returned to the class until after the fourth class period or all assignments for the class have been received.

5. **REVIEW LABS:** If you receive less than 80% on any exam you will be required to attend a review lab pertaining to information on the exam. If you attend the lab and successfully correct missed questions on the exam you may earn up to 50% of the points missed on the exam. For example, if you receive a score of 70/100 on an exam the maximum amount of points you may make up by attending the lab and correcting the questions would be 15 points. Although this requires extra work on your part, the extra points can increase your grade significantly. Anyone who misses points on an exam, even those above 80%, may re-write missed questions and earn up to 50% of the points missed. However, the review lab is only required for students who receive below 80%. Re-writes **MUST** be your own work. This is an exam. You may use your textbook and class notes to look for correct answers on the exam. You may **NOT** ask other classmates for correct answers on exams.

6. Changes to this course outline, assignments, quizzes and exams may be changed as deemed necessary by the professor to foster optimal instruction. This can include additional assignments, review quizzes or assignments and extra credit.



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7. Grading:

Grades will be calculated on a percentage basis as follows:

| | | | |
|---------------|----|-------------|----|
| 94.0 - 100% | A | 73.5-77.99% | C |
| 90.0 - 93.99% | A- | 70.0-73.49% | C- |
| 87.5 - 89.99% | B+ | 65.0-69.99% | D |
| 83.5 - 87.49% | B | Below 65% | F |
| 80.0 - 83.49% | B- | | |
| 77.5 - 79.99% | C+ | | |

Disability Information

If you qualify for accommodation under the American Disabilities Act, please see contact Student Success in Nethery Hall 100 (disabilities@andrews.edu or 269-471-6096) as soon as possible so that accommodations can be arranged.

Academic Integrity

University learning thrives on the rigor of individual investigation, the authentic exchange of ideas, and a corporate commitment to integrity and mutual respect. University learning requires all members of the academic community to behave honestly. Andrews University anchors its practices in the teachings of the Bible as well as in widely established and honorable academic traditions. As the apostle Paul calls us to authenticity in our Christian walk, so the educational institution demands of its participants true and accurate self-representation. In Ephesians, Paul invites believers “to be renewed in the spirit of your minds, and to clothe yourselves with the new self, created according to the likeness of God in true righteousness and holiness” (Eph. 4:23-24, NRSV). As scholars and as Christ servants, we build His living body through our honesty in all things, both small and great. To that end, Andrews University’s faculty and students pledge to learn and grow together, committing to the following Standards and affirming honesty as a core component of an Andrews University education.

Academic dishonesty including plagiarism, copying other students work, stealing quizzes or accepting stolen quizzes or exams is a serious offense. Possible consequences are a warning, reduced or failing grade, suspension or dismissal from the class, expulsion from the university, and/or degree cancellation.

Emergency Protocol

Andrews University takes the safety of its student seriously. Signs identifying emergency protocol are posted throughout buildings. Instructors will provide guidance and direction



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to students in the classroom in the event of an emergency affecting that specific location. It is important that you follow these instructions and stay with your instructor during any evacuation or sheltering emergency.

Professionalism

To prepare students for the professional world, certain behaviors/activities are expected in the classroom.

⑩ Cell Phones, Personal Laptops, and Recording devices: Cell phones should be turned off before entering the classroom. Picture-taking during class is not allowed. Recording devices are allowed only if pre-approved by instructor, and if approved, under no circumstance are recordings—visual or verbal—to be posted on a public website. If there is a family emergency and cell phone contact is necessary, please talk with me **prior** to class.

Laptops should not be used for surfing the web or watching movies/entertainment during class. It is disrespectful and unprofessional to use these devices inappropriately during class.

⑩ Late Assignments are unacceptable unless prearranged with instructor. (Refer to late policy specifics)

⑩ Tardiness is strongly discouraged and may reflect on your level of professionalism

⑩ Eating in class: Please do not bring food or beverages to class. Water is permitted.

Presentation is important. Your attention to detail, demeanor, and attire factor into how you are perceived as a professional. Active participation in class discussions and critiques is an essential part of learning. Without participating and expressing opinions and thoughts, it is impossible to clarify your goals and develop a personal style.

Student Responsibility

E-mail is the official form of communication at Andrews University. Students are responsible for checking their Andrews University e-mail, Moodle, and iVue alerts regularly. Please inform fellow classmates of important e-mail information, especially for cancellation of classes, changes in assignments and/or exam information. If you choose to send an e-mail to me please send them to dregal@andrews.edu. Please understand that I will be responding to e-mail during normal business hours (8-5 M-Th and 8-12 on Friday). Plan accordingly when sending e-mail if you expect an answer quickly. You should receive a response within 48 hours. If you have not received a response within 48 hours, please re-send the e-mail.

Attendance

Regular attendance is expected at all classes, laboratories, and other academic appointments. When the number of absences exceeds 20% of the total course appointments for undergraduate classes, the teacher may assign a failing grade. If you miss class, please contact classmates for notes, updates or missed information. It is your responsibility to learn missed information, get copies of handouts etc.



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Tentative Class Schedule

| Month | Date | Topic | Assignment | Martin Reading |
|--------|------|------------------------------|-------------------------------|----------------|
| Aug | 22 | Intro. Pathway of Sound | | 2 |
| | 24 | Anatomy Review | | 2 |
| | 26 | Tuning Fork Tests | Quiz | 2 |
| Monday | 29 | Tuning Fork | | |
| | 31 | Audiometer/screening | | 2 |
| Sept | 2 | Audiometer/screening | Quiz | 4 |
| Monday | 5 | NO CLASS | | 4 |
| | 7 | Audiogram interpretation | | 4 |
| | 9 | Audiogram interpretation | | 4 |
| Monday | 12 | Audiogram interpretation | WSE – class meets at 9:00 | 4 |
| | 14 | Physics of Sound | WSE | 3 |
| | 16 | The Decibel | WSE | |
| Monday | 19 | EXAM 1 | | 3 |
| | 21 | Decibel cont. | | 3 |
| | 23 | Binaural Hearing | | |
| | 26 | Loudness and Pitch | | 3 |
| | 28 | Speech audiometry | Quiz | 5 |
| | 30 | SDT/SRT | | 5 |
| Oct | 3 | Speech Discrimination | | |
| | 5 | Closed set/open set | Quiz | 5 |
| | 7 | Outer Ear | | 5 |
| Oct | 10 | NO CLASS – Fall Break | | 9 |
| | 12 | Outer ear -Anatomy functions | | 9 |
| | 14 | Outer ear – disorders | Screenings due (4B) | |
| Oct | 17 | Middle ear - anatomy | | 9 |
| | 19 | Middle ear - functions | | 10 |
| | 21 | EXAM 2 | | 10 |
| Oct | 24 | Middle ear - disorders | | 10 |
| | 26 | Middle ear - disorders | | 10 |
| | 28 | Middle ear - disorders | Pure tone lab due (4B) | |
| | 31 | Middle ear - disorders | | 10 |
| Nov | 2 | Inner ear - anatomy | | 11 |
| | 4 | Inner ear - anatomy | Quiz | 11 |
| | 7 | Inner ear - functions | | 11 |
| | 9 | Exam 3 | | |
| | 11 | Inner Ear disorders | | 11 |
| | 14 | Inner Ear - disorders | Quiz | 11 |
| | 16 | Inner ear disorders | RESEARCH Due (4D-E) | |
| | 18 | | | |



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| | | | | |
|-----|-------------------|--|----------------------------|------------|
| | 21 | Inner ear – disorders and central auditory pathway | | 11, 12 |
| | 23 | NO CLASS Thanksgiving | | |
| | 25 | NO CLASS Thanksgiving | | |
| | 28 | Central auditory pathway - disorders | | 12 |
| | 30 | Case studies | SPEECH Lab due (4C) | |
| | 2 | Exam Prep day – No required class. Review session | | |
| Dec | 5 (10:30AM-12:30) | FINAL EXAM | COMPREHENSIVE | EVERYTHING |
| | | | | |



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**Pure Tone Lab
Rubric**

Name _____

Date _____

| Audiogram | 1 | 2 | 3 | 4 | |
|---------------------------------------|----------|----------|----------|----------|-----------------|
| Neatness | 1 | 1 | 1 | 1 | 4/_____ |
| Proper air symbols | 1 | 1 | 1 | 1 | 4/_____ |
| Proper air Frequencies tested | 1 | 1 | 1 | 1 | 4/_____ |
| Proper bone symbols | 1 | 1 | 1 | 1 | 4/_____ |
| Proper bone frequencies tested | 1 | 1 | 1 | 1 | 4/_____ |
| Personal information filed out | 1 | 1 | 1 | 1 | 4/_____ |
| PTA/Reliability | 1 | 1 | 1 | 1 | 4/_____ |
| Details | 1 | 1 | 1 | 1 | 4/_____ |
| Comments/recommendations | 2 | 2 | 2 | 2 | 8/_____ |
| | | | | | |
| Total | | | | | 40/_____ |
| | | | | | |



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Speech Lab Rubric

Name _____

Date _____

| Audiogram | 1 | 2 | 3 | 4 | |
|------------------------------------|----------|----------|----------|----------|-----------------|
| Neatness | 1 | 1 | 1 | 1 | 4/_____ |
| SRT/PTA agreement | 2 | 2 | 2 | 2 | 8/_____ |
| PTA calculation | 2 | 2 | 2 | 2 | 8/_____ |
| Results in Proper boxes | 1 | 1 | 1 | 1 | 4/_____ |
| List used | 1 | 1 | 1 | 1 | 4/_____ |
| Details | 1 | 1 | 1 | 1 | 4/_____ |
| Comments | 2 | 2 | 2 | 2 | 8/_____ |
| | | | | | |
| Total | | | | | 40/_____ |
| | | | | | |



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Basic Audiology Research

| | |
|--|----|
| Explanation of Disorder | 5 |
| Etiology | 5 |
| Signs and Symptoms | 5 |
| Medical management | 5 |
| Audiology/hearing loss information/ test results | 10 |
| References/neatness/ Sourced correctly in paper | 5 |
| Peer reviewed articles | 5 |
| Spelling/Grammar | 5 |

Total 45/_____

Name: _____

Date: _____



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Trust God

And they that know thy name will put their trust in thee: for thou, Lord, hast not forsaken them that seek thee. Psalms 9:10

Wait on the Lord: be of good courage and he shall strengthen thine heart: wait, I say, on the Lord. Psalms 27:14

Trust in the Lord with all thine heart and lean not unto thine own understanding. in all they ways acknowledge Him, and he shall direct thy paths. Proverbs 3:5,6

And I say unto you, Ask, and it shall be given unto you; seek, and ye shall find; knock and it shall be opened unto you. For every one that asketh receiveth; and he that seeketh findeth; and to him that knocketh it shall be opened. Luke 11:9,10

Psalm 91

I will say of the Lord, "He is my refuge and my fortress: my God, In Him I will trust."

Thanksgiving

Let us come before His presence with thanksgiving; Let us shout joyfully to Him with psalms. For the Lord is the great God and the great King above all gods. Psalm 95:2,3

Therefore by Him, let us continually offer the sacrifice of praise to God, that is, the fruit of our lips, giving thanks to His name.

For God so loved the world that He gave His only begotten son that whosoever believeth in Him, should not perish but have everlasting life. John 3:16

For I know the plans I have for you," declares the LORD, "plans to prosper you and not to harm you, plans to give you hope and a future. ¹² Then you will call on me and come and pray to me, and I will listen to you. ¹³ You will seek me and find me when you seek me with all your heart. Jeremiah 29:11-13

Creator – God wins!!!!

Gen 1:1 In the beginning God created the heavens and the earth.

Gen 1:31 Then God saw everything that He had made, and indeed it was very good. So the evening and the morning were the sixth day.

Gen 2:2,3 And on the seventh day God ended His work which He had done, and He rested on the seventh day from all His work which He had done. Then God blessed the seventh day and sanctified it, because in it He rested from all His work which God had created and made.



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Exodus 20

Exodus 20:3 You shall have no other gods before me.

Exodus 20: 8-11 Remember the Sabbath day , to keep it holy. Six days you shall labor and do all your work, but the seventh day is the Sabbath of the Lord you God. In it you shall do not work; you, nor your son, nor your daughter, nor your male servant, nor our female servant, nor your cattle, nor your stranger who is within your gates. For in six days the lord made the heavens and the earth, the sea, and all that is in them and rested the seventh day. Therefor the Lord blessed the Sabbath day and hallowed it.

Psalm 139:13,14 For you formed my inward parts; You covered me in my mother's womb. I will praise you, for I am fearfully and wonderfully made; Marvelous are Your works, and that my soul knows very well.

Rev 14:12 Here is the patience of the saints; here are those who keep the commandments of God and the faith of Jesus.

Rev 21:1 Now I saw a new heaven and a new earth, for the first heaven and the first earth had passed away. Also there was no more sea. Rev 21:1

Verse 3 - And I heard a loud voice from heaven, saying, "Behold the tabernacle of God is with men and He will dwell with them, and they shall be His people. God himself will be with them and be their God And God will wipe away every tear from their eyes; there shall be no more death, nor sorrow, nor crying. There shall be no more pain, for the former things have passed away.

Rev 22:14 Blessed are those who do His commandments, and that they may have the right to the tree of life, and may enter through the gates into the city.

INSTRUCTOR PROFILE



Darah Regal, AuD., CCC-A
Assistant Professor Audiology

Education

Doctor of Audiology, Au.D, Arizona School of Health Sciences
Master of Arts degree in Audiology, MA, Ball State University
Bachelor of Science degree in Communicative Disorders, BS, Andrews University
Certificate of Clinical Competence in Audiology (CCC-A)
Fellow of the American Academy of Audiology (F-AAA)

Biography

Darah Regal, Au.D., CCC-A is an assistant professor of audiology at Andrews University. Dr. Regal has worked in a private ENT office, giving her a solid medical and clinical background. As a school audiologist in Elkins, West Virginia, she developed a program for testing Central Auditory Processing Disorders (CAPDs) and significantly increased the number of children receiving services for hearing related challenges. Dr. Regal worked with teachers and administrators to create strong support and proactive help for hearing impaired and children with CAPD in order to facilitate optimal learning. She began teaching at Andrews University in 1996 as a contract teacher with full-time employment since 2000. At Andrews, she has developed an audiology clinic for people on campus in the community including testing for Central Auditory Processing.

Dr. Regal is married to Dr. Jeff Regal who is also an audiologist. They have two sons and two lovely daughters-in-law.