*This syllabus is to be used for informational purposes only!

* Students will receive the official syllabus from their teacher.

CRN: 82170  SECTION: 01  COURSE NUMBER: COSD-372  COURSE TITLE: Lab Instrumentation

SEMESTER: FALL  YEAR: 2011

SCHOOL: School of Communications  DEPARTMENT: Comm Sciences and Disorders
INSTRUCTOR: Lucker

WEB SITE: www.ncapd.org

EMAIL: apddrj@verizon.net

INSTRUCTIONAL METHODS

Blackboard
Audio Visual aids
Case method
Laboratory
Problem-based learning
Writing Across the Curriculum
Group projects
Undergraduate Research
Guest Speaker
Student Presentation
Rubric
Intellectual Openness & Cultural Diversity
Historical Awareness
Empirical Analysis
Social & Human Relations
Quantitative Literacy & Statistical Reasoning
Composition
Speaking
Technological Competence

KEYWORDS

Electronics,
circuits,
equipment,
research

*This syllabus is to be used for informational purposes only!
*Students will receive the official syllabus from their teacher.*

**SYLLABUS DETAILS**

Howard University  
John H. Johnson School of Communications  
Department of Communication Sciences and Disorders  
Syllabus

**COURSE PREFIX, NUMBER, AND TITLE:**

COSD 372  
Instrumentation & Technology for Clinic & Research Purposes  
(formerly: Lab/Clinical Instrumentation & Technology)

**PROFESSOR/LEAD FACULTY:**

Instructor: Dr. Jay Lucker  
Location: Rm. 248 (The Abe Tishman Memorial Computer Lab)  
Meeting Time: 5:10-7:30 p.m.  
Office: On the Second Floor in the Department wing  
Hours: Tuesdays: 8:30am to 4pm  
Thursdays: 8:30am to 1:30pm  
Best to contact Dr. Lucker for an appointment  
Email: apddrj@verizon.net  
Cell Phone: 301-254-8583

**COURSE DESCRIPTION:** This course introduces undergraduate students in audiology and speech-language pathology to the instrumentation and equipment we use in the professions as well as in conducting research. The course begins with an overview of electronics and concepts regarding instrumentation and goes into research methods, ethics, and design. The course finishes with hands-on experiences in using instrumentation and technology for various clinical and research activities.

**COURSE RATIONALE:** This course will fulfill the requirements set forth by the American Speech-Language Hearing Association for course work in the area of clinical applications of lab instrumentation and research methods and design.

**COURSE OBJECTIVES:**

Learning Outcomes:  
After completing this course, students will:  
• Explain the basics of electronics related to instrumentation used in labs and clinics related to
the professions of speech-language pathology and audiology

• Explain the basics of the general equipment, instrumentation, and computer technology used in the professions of speech-language pathology and audiology
• Be able to appropriately set-up lab and clinic equipment, instrumentation and computer technology that may be used in a Speech & Hearing Clinic or Lab for clinic or research purposes
• Describe the applications of the equipment, instrumentation, and computer technology for research and clinical applications in the professions of speech-language pathology and audiology
• Be able to run and use lab and clinic equipment, instrumentation and computer technology under discussion in the course for clinic and research purposes
• Write up a basic proposal for a research study using equipment and instrumentation in the fields of speech-language pathology & audiology

LEGEND FOR LEARNING OUTCOMES

S=Standards for CCC

*Denotes learning outcomes, which must be achieved for ASHA CCC (KASA) requirements. If an outcome is not achieved (i.e. does not meet criteria noted), the student must complete a remediation plan.

WRITING MATTERS

Writing is an essential tool for thinking and communicating in virtually every profession. Therefore, in this course it is expected that you produce writing that is not only thoughtful and accurate, but also organized, clear, and consistent with the rules of Standard American English. If your writing does not meet these standards, you may lose points or be asked to revise any of your written work. For assistance with your writing, you can go to the student section of the Writing Across the Curriculum (WAC) website:
http://www.cetla.howard.edu/wac/students/aspx

REQUIRED TEXTS/READINGS


Additional Readings (Optional)

[All readings will be assigned in advance. You will need access to the internet for this course for two reasons. First, Dr. Lucker will be using Blackboard and assignments, exams, readings, etc.]
will be posted on Blackboard. Dr. Lucker will provide the power point handouts for each class on Blackboard as downloads.]

Additional Required Books/Videos/DVDs:

NOTE: This course will be posted on Blackboard. PowerPoint, lecture notes and assignments should be checked weekly.

COURSE REQUIREMENTS
Students are required to:
• Do all readings assigned
• Attend all classes as demonstrations for lab assignments will be done in class (no demonstrations will be completed outside of class without prior approval of Dr. Lucker)
• Complete all lab assignments and hand in completed lab reports the date they are due. Any lab reports handed in after there due dates will loose 10% of the grade earned. (Assignments or reports handed in late will ONLY be accepted upon prior approval of Dr. Lucker)
• Take all exams
• Complete the course projects that will be assigned on time

TOPICAL OUTLINE/CALENDER OF WEEKLY REQUIREMENTS

Date
Class Topics
Assignments
Aug. 22 Section 1: How Equipment Works: Underlying concepts in equipment, instrumentation and computer applications in the fields of speech-language pathology and audiology
Unit #1A: Circuits
Electricity: AC vs. DC circuit components and concepts
Open, closed, complete, short circuits
Grounding & Safety
Exam #1 (covering material in Unit 1)
Readings: Decker & Carrell/Textbook – Chapters 1 through 5
Aug. 29

Unit #1B: Combining Equipment into arrays
Connecting equipment
Cords, plugs, connections Exam #1 (covering material in Unit 1)
Readings: Decker & Carrell/Textbook – Chapters 1 through 5
Sept. 12 Unit #1C: Diagramming equipment: Block diagrams vs. electrical diagrams Exam #1 (covering material in Unit 1)
Readings: Decker & Carrell/Textbook – Chapters 1 through 5
Sept. 12 Unit #2: Components of equipment/instrumentation
2A: Transducers: microphones, loudspeakers, earphones Exam #2 (covering material in Unit 2)
Readings: Remainder of Decker & Carrell/Textbook
Sept. 19 Unit #2B: Amplifiers, Attenuators, Filters Exam #2 (covering material in Unit 2)
Readings: Remainder of Decker & Carrell/Textbook
Sept. 19 Unit #2C: Displaying data: CRTs/Monitors, Oscilloscopes, Recorders
Exam #2 (covering material in Unit 2)
Readings: Remainder of Decker & Carrell/Textbook
Sept. 26 Unit #2D: Collecting Data: Digital/analog collection, tape recorders, sound level meters
Exam #2 (covering material in Unit 2)
Readings: Remainder of Decker & Carrell/Textbook
Sept. 26 Unit #2E: Computer components: Displays, collection (CPUs), Printers, Scanners, wire/wireless connections Exam #2 (covering material in Unit 2)
Readings: Remainder of Decker & Carrell/Textbook
Oct. 3 Section 2: Research concepts related to the use of equipment and technology
Unit #3: Research applications for equipment and instrumentation
3A: Basic types of research: quantitative vs. qualitative analysis
Oct. 24

Unit #3D: Analyzing your findings/the results section including a basic overview of statistical analyses
Oct. 31 Section 3: Hands on experiences with and presentations related to specific equipment, instrumentation and computer applications in the fields of speech-language pathology and audiology
Unit #4: Equipment & instrumentation for collecting data: using computers, sound level meters, & oscilloscopes Readings: Manuals for equipment used in Labs on SLMs and Oscilloscopes
Nov. 7 Unit #5: Equipment & instrumentation for analyzing speech & voice: VisiPitch Readings: Manual for VisiPitch VisiPitch video
DESCRIPTION OF ASSIGNMENTS

The specifics for each course project will be provided in writing and will be available on BB. We will also discuss each project in class. Each course project will require two parts: a written part and an in-class demonstration/presentation.

Course project #1: This course project will involve you developing a basic research proposal and making believe you have data you collected, analyzing the data and presenting the data in class. In essence, this course project will involve your writing a brief introduction to the project, the methodology section of your research study, and your presentation of the research findings (results section). You will present your make-believe research study in class as a power point presentation, and you will write up your research study to be submitted to Dr. Lucker as an assignment through BB.

Rubric for Course Project #1: This paper/project will require you to complete a research project (which you will develop and for which you will “make up” data). The paper will follow APA style and we will go over APA style in class. Additionally, you are to complete the following for your paper. (APA style worth 25%)
Introduction: discuss the introduction of what you researched and why. Include references from the literature on the topic by doing a review of the literature of at minimum two articles/books/reputable websites and at maximum five articles/books/reputable websites. End with one research question you will answer and the hypothesis from that question you are testing out. (Worth 12.5%)
Methodology: discuss the equipment/instrumentation you “used” in your research. Include the subjects, equipment, procedures, what you collected. (Worth 25%)
Results: Make up results for two different groups of subjects and provide the means, standard deviations, and one statistical test you used. We will learn how to present statistical findings in class. (Worth 12.5%)
Conclusions: Describe what you have concluded from your research. Answer your research question and hypothesis. (Worth 25%)

Course project #2: This course project will involve you choosing a computer application in the areas of speech therapy, language therapy, auditory training including work for auditory processing disorders. You will choose the application and then present and demonstrate the application in class. You will also write up a description of your therapy tool and submit it to Dr. Lucker as an assignment through BB.
Rubric for Course Project #2: There will be two components of this project: One, a written paper; Two, an in-class presentation. Here is what you will do and how it will be graded. Written component (worth a total of 50%): You will describe the computer application as follows.
1. For what disorder(s) is this application appropriate (5%)
2. For what age level/grade level/mental or cognitive status is this program appropriate (5%)
3. Is this only for clinic use? Can it be used at home? In the classroom? At Work (for adolescents and adults? (5%)
4. Describe how to access the program, load it, or get to it from the internet, etc. 10%)
5. Describe the components of the program (10%)
6. Describe what is expected as the outcome after completing the program (what does the client learn) (15%)

In-class presentation: Based on your paper and the same six things written above, same grading, you will present your program to the students in class. Be sure you are presenting it as an “expert” using the program. (50% as well)

GRADING CRITERIA

General Grading Rubric:
Grades are based on the projects, lab assignments, and exams. Thus, a student taking an exam, handing in a lab assignment, or completing a project will be graded on that specific project at a value between 0% to 100%. Each exam, project, and lab assignment will have a point value with all completed assignments, exams, and projects having a total possible earned point value of 100. If you earn 90% on something and that item has a point value of 20, you will have earned 90% of the 20 points or 18 points. If you add up all of your points, you will come up with a total of 100 points.
Course Assignments and their percentage of the final grade

Assignment Points
Attendance and Class Participation 10 Points
Exam on Unit #1 10 points
Exam on Unit #2 10 points
Lab #1 10 points
Lab #2 10 points
Lab #3 10 points
Lab #4 10 points
Project #1 15 points (10 points written + 5 points presentation)
Project #2 15 points (10 points written + 5 points presentation)
Total 100 points
Grading Scale

Letter Grade Total Points Earned Quality Points
A 90-100 4.0
B 80-89 3.0
C 70-79 2.0
D 60 – 69 1.0
F 59 or below No Quality Points

STANDARDS:

American Speech-Language-Hearing Association (ASHA)

CLASS POLICES

Attendance: All students are expected to attend every class. Class attendance and participation is included in your grade for this course. If you are unable to attend class, you must contact Dr. Lucker (email or phone) before class providing a valid excuse for your non-attendance. In some cases, you may be asked to provide evidence for that excuse.

Tardiness: Attendance will be taken at each class. Attendance will be accepted as “on-time” if you arrive within the first 10 minutes of class. Arrival after that time requires an acceptable excuse. Please provide your excuse, when possible, by emailing or phoning Dr. Lucker before class begins. As with attendance, you may be required to provide appropriate evidence for your excuse.

The focus is not just on attendance or being on time for class, but being responsible as a professional. Thus, just let Dr. Lucker know if you are not able to make class. Be responsible. Dr. Lucker is very understanding.

Class Etiquette: One and only one word to be said here, “R-E-S-P-E-C-T!” Class discussions are open discussions. There are no “dumb” questions or “foolish” remarks. Every question is an acceptable question. Every remark is an acceptable remark. Again, the focus is to develop yourself as a responsible professional having respect for the clients you serve and the professionals with whom you are working. Thus, we are to respect each other’s opinions, ideas, and comments. We all have our differences, and that is what makes this world unique. We will accept each other’s differences and respect each other’s right to be different.
ACADEMIC CODE OF STUDENT CONDUCT

Howard University is a community of scholars composed of faculty and students both of whom must hold the pursuit of learning and search for truth in the highest regard. Such regard requires adherence to the goal of unquestionable integrity and honesty in the discharge of teaching and learning responsibilities. Such regard allows no place for academic dishonesty regardless of any seeming advantage or gain that might accrue from such dishonesty. To better assure the realization of this goal any student enrolled for study at the University may be disciplined for the academic infractions defined below.

Definitions of Academic Infractions
1. Academic cheating — any intentional act(s) of dishonesty in the fulfillment of academic course or program requirements. This offense shall include (but is not limited to) utilization of the assistance of any additional individual(s), organization, document, or other aid not specifically and expressly authorized by the instructor or department involved. (Note: This infraction assumes that with the exception of authorized group assignments or group take home assignments, all course or program assignments shall be completed by an individual student only without any consultation or collaboration with any other individual, organization, or aid.)
2. Plagiarism — to take and pass off intentionally as one's own; the ideas, writings, etc. of another without attribution (without acknowledging the author).

Administration of the Code
The authority and responsibility for the administration of this Academic Code of Conduct and imposition of any discipline upon any particular student shall vest in the faculty of the School or College in which the student is enrolled but may be delegated by the faculty to the Dean of the School or College in which the student is enrolled. The Dean shall be assisted in this responsibility by any faculty members and administrative officers in the School or College the Dean shall consider appropriate. Any student accused of an infraction of this Code shall have a right to a limited hearing, as described herein, of the charges against him before a committee of faculty members, at least three in number, none of whom shall be the accuser or witness to the alleged infraction. The committee may be either a standing committee of the School or College, whose responsibilities are considered appropriate by the Dean to conduct a hearing under this Code, or a committee appointed by the Dean for the special purpose of conducting only a particular hearing or all such hearings that may arise during an annual period. The hearing committee shall be chaired by a member designated by the Dean and the chairperson shall have the right to vote in cases of a tie vote.

Procedure
1. Any faculty member who has knowledge of an infraction of this Code shall assemble all supporting evidence and identify any additional witnesses to the infraction and make this information known to the Dean of the School or College in which the student is enrolled as soon as possible after the date of the Infraction.
2. Upon being notified of an alleged infraction of this Code, the Dean shall, as soon as possible, consider the weight of the assembled evidence and, if the Dean considers the evidence sufficient to warrant further action the Dean shall notify the alleged offender of the charge(s) against him/her together with a designation of a hearing time and place where the accused may respond to the charge(s). The hearing date shall be as soon as possible after notification to the accused of the charge(s) against him/her. The Dean shall similarly notify the hearing committee members of
the time and place of the hearing together with identification of the accuser and accused.

3. The "limited hearing" authorized by this Code is not an adversarial proceeding. Constitutional principles of "due process" are not applicable to these proceedings. The faculty member concerned shall present the case for the University. Both shall be allowed to present witnesses and evidence in support of their positions concerning the charge(s). However, no legal counsel for either side shall be allowed. The members of the hearing committee may question the accused and the accuser and examine all evidence presented. The standard of proof for the proceeding under this Code shall be the standard of "substantial evidence." The proceedings may be tape-recorded but will not be transcribed.

4. After the hearing of the charge(s) against the accused, the hearing committee shall, in closed session, vote by secret ballot to sustain or reject the charge(s). If the charges are sustained, the committee shall then recommend the disciplinary penalty to be imposed upon the student. The chairperson of the committee shall transmit the results and recommendation of the hearing committee to the Dean as soon as possible after the hearing.

5. Upon receipt of the results and recommendations of the hearing committee, the Dean shall, as soon as possible, notify the student of these results and recommendations, including notification that the student may appeal directly to the Dean for mitigation of any disciplinary penalty recommended by the hearing committee. The student shall have five working days to make such appeal from date of receipt of notification.

6. After hearing any appeal from a student, the Dean shall be authorized to determine the appropriate academic penalty under the circumstances. The Dean may sustain the recommendation of the Committee concerning the penalty or may reduce or increase the severity of the penalty. The Dean's decision shall be communicated to the student as soon as possible and shall be final.

Penalties
The minimum disciplinary penalty imposed upon a student found to have committed an infraction(s) of this Code shall be no credit for the course assignment or examination in which the infraction(s) occurred; however, a more severe penalty, such as failure in the course involved or suspension from the University, may be imposed depending upon the nature and extent of the infraction(s).

Howard University Student Manual - page 38
(http://www.howard.edu/academics/courses/Manual/2006spring.pdf)
Adopted by the Board of Trustees
January 24, 1987

STUDENTS WITH DISABILITIES
All students registered with the university are eligible for services, including testing, note-taking, assistive technology, interpretative services for the deaf and hard-of-hearing, and reading services. As soon as a student is admitted to the University, he or she must submit a Self-Disclosure of a Disability form to the Office of Special Students Services along with:

• A copy of the documentation of the specific disability must be provided at the time of intake
• Information regarding the student’s academic history (transcripts, IEP, etc.)
• A copy of the class schedule (if applicable).

The Office of the Dean for Special Student Services may be reached at 202-238-2420 or by fax at 202-588-9755.
Professor Note:
Dr. Lucker understands and respects the rights of all students. If you have specific needs, please let Dr. Lucker know. He will do everything possible and appropriate to meet your needs.

If circumstances require you to be late on an assignment or not be able to attend a class, contact Dr. Lucker before the due date of the assignment or before class. In emergencies, true emergencies, Dr. Lucker understands if you contact him late. However, contacting him is the underlying factor here. (Lack of contacting Dr. Lucker for (a) missed classes, (b) miss handing in assignments on time, and (c) not being able to attend an exam at its designated time will lead to your loosing 10 points toward your final, total points. This (essentially) can bring your final grade down by one whole grade (such as from an A down to a B).

If necessary, you can discuss with Dr. Lucker making up tests or delaying handing in assignments (lab and projects) on time. No allowances will be made for not handing in assignments or taking tests. In the last case of not handing it in, you will earn 0% on such assignments or tests. You can follow your earned points by checking Blackboard for this course.

Students’ Rights:
Dr. Lucker understands and respects the rights of all students. If you have specific needs, please let Dr. Lucker know. He will do everything possible and appropriate to meet your needs.

If circumstances require you to be late on an assignment or not be able to attend a class, contact Dr. Lucker before the due date of the assignment or before class. In emergencies, true emergencies, Dr. Lucker understands if you contact him late. However, contacting him is the underlying factor here.

If necessary, you can discuss with Dr. Lucker making up tests or delaying handing in assignments and projects on time. No allowances will be made for not handing in assignments or taking tests. In the last case of not handing it in, you will earn 0% on such assignments or tests. You can follow your earned points by checking Blackboard for this course.