

<b>1</b>	Course title	<b>Instrumentation in Speech-Language Pathology</b>
<b>2</b>	Course number	<b>1804743</b>
<b>3</b>	<b>Credit hours (theory, practical)</b>	<b>3 (theory)</b>
	<b>Contact hours (theory, practical)</b>	<b>3 per week</b>
<b>4</b>	Prerequisites/corequisites	<b>None</b>
<b>5</b>	Program title	<b>Speech-Language Pathology</b>
<b>6</b>	Program code	<b>1804</b>
<b>7</b>	Awarding institution	<b>The University of Jordan</b>
<b>8</b>	Faculty	<b>Rehabilitation Sciences</b>
<b>9</b>	Department	<b>Hearing and Speech Sciences</b>
<b>10</b>	Level of course	<b>Graduate</b>
<b>11</b>	Year of study and semester (s)	<b>2<sup>nd</sup> Year 2<sup>nd</sup> semester</b>
<b>12</b>	Final Qualification	<b>Msc.</b>
<b>13</b>	Other department (s) involved in teaching the course	<b>None</b>
<b>14</b>	Language of Instruction	<b>English-Arabic</b>
<b>15</b>	Date of production/revision	<b>3/2/2020</b>

**16. Course Coordinator:**

<b>Name</b>	<b>Yaser S. Natour</b>
<b>Rank</b>	<b>Professor</b>
<b>Office number</b>	<b>23269</b>
<b>Office hours</b>	<b>3-4 p.m. Sunday and Monday</b>
<b>Phone number</b>	<b>0777427071</b>
<b>Email addresses</b>	<b>natour@fulbrightmail.org</b>

**17. Other instructors:**

<b>Name</b>	<b>(please follow the example: "Name", Ph.D. OR "Name", MA.)</b>
<b>Rank</b>	
<b>Office number</b>	
<b>Office hours</b>	
<b>Phone number</b>	
<b>Email addresses</b>	
<b>Name</b>	
<b>Rank</b>	
<b>Office number</b>	
<b>Office hours</b>	
<b>Phone number</b>	
<b>Email addresses</b>	

**18. Course Description:**

*As stated in the approved study plan.*

This course will provide the student with an understanding of principles for applying instruments in the field of speech and voice with an emphasis on clinical approaches to speech and voice. This will include a survey of the principal equipment and instrumentation and augmentative devices available to speech pathologists in their professional activities within medicine, education, and private practice.

**1. 19. Course aims and outcomes:****A- Aims:**

- Students will learn how technological advances impact the measurement of speech, voice, and swallowing.
- Students will learn to evaluate speech, voice, and swallowing disorders utilizing instruments
- Students will be able to identify the different indices used to measure clinical data (dB, air pressure, airflow, perturbation, jitter, shimmer, Fo, etc.)
- Students will learn be able to discuss the operating principles of Visi-Pitch, Nasometer, CSL, spectrograph, videostroboscopy, videofluoroscopy, electrical stimulation and other devices.
- Students will learn be able to evaluate and measure progress and treatment efficacy utilizing various instruments

**B- Intended Learning Outcomes (ILOs):**

Upon completing the program, students are expected to:

1. **Program ILO:** Demonstrate deep knowledge of the basic human communication processes, as well as the nature of speech, language, and hearing.

<b>Specific Course ILO(s):</b>	1.1 develop basic terms and definitions related to instruments utilized in speech-language pathology
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	1.2 identify basic terms related to various instruments
2. <b>Program ILO:</b> Apply the basic principles and methods of prevention, assessment and intervention for individuals with communication disorders.	
<b>Specific Course ILO(s):</b>	2.1 identify norms and scores for various speech and language disorders. 2.2 be able to classify disorders according to their measurement data.
3. <b>Program ILO:</b> Write theses and reports to a professional standard, equivalent in presentational qualities to that of publishable papers.	
<b>Specific Course ILO(s):</b>	3.1. identify different techniques of instrument aided assessment and treatment
4. Gather or collect information relevant to assessment and treatment of communication disorders and critically evaluate the information and samples collected	
<b>Specific Course ILO(s):</b>	4.1 evaluate speech, voice, and swallowing disorders using instruments 4.2 analyz evaluation data for the purpose of diagnosis and treatment
5. <b>Program ILO:</b> Formulate specific and appropriate patient management plans. Furthermore, conduct appropriate diagnostic monitoring procedures, treatment, therapy or other actions safely and skillfully.	
<b>Specific Course ILO(s):</b>	5.1 measure data of progress and treatment efficacy 5.2 develop instrument aided activities for speech, voice and swallowing therapy
6. <b>Program ILO:</b> Solve clinical problems using critical thinking skills.	
<b>Specific Course ILO(s):</b>	6.1develop skills to conduct instrumental evaluation techniques (visi-pitch, videostroboscopy, Endoscopy, etc. ) 6.2 develop clinical measurement skills and use in the treatment of patients with speech, voice and swallowing disorders
7. <b>Program ILO:</b> Work, where appropriate, in partnership with other professionals, support staff, service users and their relatives.	
<b>Specific Course ILO(s):</b>	7.1 conduct instrumental evaluation techniques (visi-pitch, videostroboscopy, Endoscopy, etc.) according to the patient's needs
8. <b>Program ILO:</b> Demonstrate understanding of ethical responsibility when working with patients with communication disorders and their families.	
<b>Specific Course ILO(s):</b>	
9. <b>Program ILO:</b> Demonstrate commitment to lifelong learning, teamwork, scientific research, analysis, interpretation	
<b>Specific Course ILO(s):</b>	

<b>10. Program ILO:</b> Demonstrate the ability to think critically and solve problems, and use technology to monitor, manage, analyze, and transfer information to generate knowledge and employ it for future uses.	
<b>Specific Course ILO(s):</b>	10.1 write diagnostic reports and treatment plans based on measurement data 10.2 Select appropriate instrumental treatment methods
<b>11. Program ILO:</b> Demonstrate the ability to take responsibilities and exercises their rights and duties within the value system of society and their public morals.	
<b>Specific Course ILO(s):</b>	

**20. Topic Outline and Schedule:**

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
<b>Introduction</b> Basic Instrumentation/Skills/Safety	<b>1<sup>st</sup></b>	<b>Yaser Natour</b>	<b>1.1</b> <b>1.2</b>	<b>Discussion</b>	(Chapter 1, 2 Baken & Orlikoff, 2000).
<b>General Purpose Tools</b> Analog Electronics Digital Systems	<b>2<sup>nd</sup></b>	<b>Yaser Natour</b>	<b>1.1</b> <b>2.1</b>	<b>Discussion</b>	(Chapter 3, 4 Baken & Orlikoff, 2000).
<b>Speech Intensity</b> Background Intensity Measurement Sound Level Meter	<b>3<sup>rd</sup></b>	<b>Yaser Natour</b>	<b>2.2</b>	<b>Data reports</b>	(Chapter 5 Baken & Orlikoff, 2000).
<b>Vocal Fundamental Frequency</b> Periodicity Measuring Fundamental Frequency	<b>4<sup>th</sup></b>	<b>Yaser Natour</b>	<b>3.1</b>	<b>Data reports, presentation</b>	(Chapter 6 Baken & Orlikoff, 2000).
<b>Sound Spectrography</b> <b>Aerodynamic Measurement and Analysis</b> <b>Electroglottography</b> <b>Electromayography</b> Advantages of Instrumental Measurements	<b>5<sup>th</sup></b>	<b>Yaser Natour</b>	3.1 4.1		(Chapter 7 Baken & Orlikoff, 2000)
<b>Air Pressure</b> General Physical	<b>6<sup>th</sup></b>	<b>Yaser</b>	3.1 4.1		(Chapter 8 Baken

Principles Air pressure instrumentation Air pressure measurement		<b>Natour</b>			& Orlikoff, 2000).
<b>Airflow and Volume</b> General Physical Principles Air pressure instrumentation Air pressure measurement	<b>7<sup>th</sup></b>	<b>Yaser Natour</b>	4.1 4.2		(Chapter 8 Baken & Orlikoff, 2000).
<b>Mid-term Exam (30%)</b>	<b>8<sup>th</sup></b>	<b>Yaser Natour</b>			
<b>Air Pressure</b> General Physical Principles Air pressure instrumentation Air pressure measurement	<b>6<sup>th</sup></b>	<b>Yaser Natour</b>	3.1 4.1		(Chapter 8 Baken & Orlikoff, 2000).
<b>Airflow and Volume</b> General Physical Principles Air pressure instrumentation Air pressure measurement	<b>7<sup>th</sup></b>	<b>Yaser Natour</b>	4.1 4.2		(Chapter 8 Baken & Orlikoff, 2000).
<b>Laryngeal Function</b> Visualization of the vocal fold (Videostroboscopy) Correlates of vocal fold motion Glottal aerodynamics	<b>11<sup>th</sup></b>	<b>Yaser Natour</b>	<b>5.2</b> <b>6.1</b> <b>7.1</b>	<b>Practical training</b>	(Chapter 9 Baken & Orlikoff, 2000).
<b>Velopharyngeal Function</b> Background considerations Direct assessment of velopharyngeal function (Videofluoroscopy) Indirect assessment of velopharyngeal function	<b>12<sup>th</sup></b>		<b>5.1</b> <b>5.2</b> <b>6.1</b> <b>6.2</b>	<b>Practical training</b>	(Chapter 10 Baken & Orlikoff, 2000).
<b>Swallowing Function</b> Swallowing evaluation instruments Direct assessment of swallowing (MBS, Videofluoroscopy)	<b>13<sup>th</sup></b>		<b>6.1</b>		Logemann, J.A. (1998). Evaluation and Treatment of Swallowing Disorders. Pro-ed: Texas. Chapter 12

					Selected articles
<b>Multidisciplinary Management of Dysphagia</b> Dysphagia team Radiographic Procedures Efficacy of Teamwork Measurements of Swallowing	<b>14<sup>th</sup></b>		<b>6.1</b> <b>10.2</b>		Logemann, J.A. (1998). Evaluation and Treatment of Swallowing Disorders. Pro-ed: Texas. Chapter 13  Selected articles
Presentation and data reports	<b>15<sup>th</sup></b>		<b>5.1</b> <b>5.2</b> <b>7.1</b> <b>10.1</b> <b>10.2</b>		Selected articles
<b>Final Exam (40%)</b>	<b>16<sup>th</sup></b>				

## 21. Teaching Methods and Assignments:

**Please pick the approaches that will be used to achieve course and clinical objectives related to the ILOs:**

Select if applied	Instructional Methods	Learning Activities (Examples)
	Direct Instruction	<ul style="list-style-type: none"> <li>Structured orientation lectures</li> <li>Skills and procedures demonstrations</li> </ul>
X	Interactive Instruction	<ul style="list-style-type: none"> <li>Clinical conferences and case presentations</li> <li>Seminars and discussions</li> </ul>
X	Experiential Learning	<ul style="list-style-type: none"> <li>Experiential learning in clinical setting</li> <li>Simulation</li> <li>Hands-on learning</li> </ul>
X	Independent Study	<ul style="list-style-type: none"> <li>Self-directed literature review and synthesis to address problems in a specific case study</li> <li>Reflective Journaling</li> </ul>
	Blended Learning	<ul style="list-style-type: none"> <li>Combined face-to-face classroom practices with computer-mediated activities regarding content and delivery of course topics</li> </ul>
	Other (please specify)	

## 22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Exams		
Exam	Date	Grade
Midterm	12-3-2020	30%
Final	14-5-2020	40%
Research Paper	30-4-2020	30%

Assignments	
<b>Assignment 1:</b>	
<b>Assignment description:</b>	<b>Writing an instrument aided research proposal (Literature review, Methodology, Results, Discussion, Conclusion)</b>
<b>Assignment objective:</b>	
<b>Assignment due date:</b>	<u>30-4-2020</u>
<b>Grade:</b>	
<b>Rubric:</b>	(can be in an appendix)

**23. Course Policies:****A- Attendance policies:**

- Attendance will be taken periodically throughout the semester.
- Students are expected to attend and actively participate in all classes.
- Students are expected to be on time.
- When the student is unable to attend class, it is a courtesy to notify the instructor in advance using either e-mail or phone.
- Repeated tardiness or leaving early will not be accepted.
- Students who miss class (or any portion of class) are responsible for the content. Any student who misses a class has the responsibility for obtaining copies of notes, handouts, assignments, etc. from class members who were present. If additional assistance is still necessary, an appointment should be scheduled with the instructor. Class time is not to be used to go over material with students who missed class(es).
- An absence of more than 15% of all the number of classes, which is equivalent of ( 3 ) classes, requires that the student provides an official excuse to the instructor and the dean.
- If the excuse was accepted the student is required to withdraw from the module.
- If the excuse was rejected the student will fail the module and mark of zero will be assigned as suggested by the laws and regulations of the University of Jordan. Please refer to pages 133, 134 of the student handbook.

**B- Absences from exams and handing in assignments on time:**

- The instructor will not do any make-up exams.
- Exceptions for make-up exams and late submission of class assignments will be made on a case-by-case basis for true personal emergencies that are described as accepted by the regulations of UJ (e.g., documented medical, personal, or family emergency).
- Make-up exams will be arranged if justifications for missing the exam satisfy the above. It is the student's responsibility to contact the instructor within 24 hours of the original exam to schedule a make-up session. A make-up exam should be taken within a week from the original exam date, unless the student can provide documentation that makes meeting that deadline impossible; otherwise, the recorded score for that exam for the student will be a zero.
- Late assignments will not be accepted and submission of assignments (due to unjustified absence from class) by other students will not be accepted regardless of how much work the student put into its preparation.

**C- Health and safety procedures:**

- Students will not be in direct contact with patients during this course.
- Students are not expected to use any heavy tools or equipment that might impose health and safety issues during this course.
- Students should work safely, including being able to select appropriate hazard control and risk management, reduction or elimination techniques in a safe manner in accordance with health and safety legislation.
- Students should understand the importance of and be able to maintain confidentiality.



- Students should understand the importance of and be able to obtain informed consent.
- Students should know the limits of their practice and when to seek advice or refer to another professional

**D- Honesty policy regarding cheating, plagiarism, misbehavior:**

- Students are expected to observe all University guidelines pertaining to academic misconduct.
- Any work submitted by a student for academic credit must be the student's own work. Submission of work taken directly from another source (e.g., book, journal, internet, clinic forms, or another student work) will be considered plagiarism and the student/group will get a zero grade for that work if part of an assignment. In addition, if copying occurred, both the student who copied the work and the student who gave material to be copied (if applicable) will receive a zero for the assignment.
- Students are expected to do work required for assignments on their own. Asking other instructors at the JU clinic or the staff, or other students to assist in or do any part of the assignment for them will negatively affect their grade on that assignment. The course instructor is the person the student needs to talk to if s/he has any difficulties pertaining to an assignment or project and is strongly encouraged to schedule an appointment with the instructor if such difficulties arise during the semester.
- Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited.
- Any forms of academic misconduct will be handled according to the University of Jordan guidelines.

**E- Grading policy:**

Grading for this course will be determined based upon the accumulation of points for variety of assignments and exams. All work will be evaluated on completeness, organization, clarity of information, and the integration and application of the material.

**F-Available university services that support achievement in the course:**

The University of Jordan provides many services to support social, health, and mental well-being of students in general and students with disabilities in specific. Students are advised to visit the Faculty of Students Affairs to learn more about those services. If you are a student with a disability for which you may request accommodations, please notify the staff of Services for Student with Disabilities (Faculty of Students Affairs) as soon as possible. Please also contact the instructor as soon as possible (email is acceptable) so the appropriate accommodations for this course can be made.

**24. Required equipment:**

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**25. References:**

A- Required book (s), assigned reading and audio-visuals:


- Baken , R. & Orlikoff R. (2000). Clinical Measurement of Speech and Voice. 2nd Ed. Ingular Thomson Learning. San Diego, CA.
- Logemann, J.A. (1998). Evaluation and Treatment of Swallowing Disorders. Pro-ed: Texas.

B- Recommended books, materials, and media:

- Bzoch, R. (1997). Communication Disorders Related to Cleft Lip and Palate. 4nd Ed. Po-Ed: Texas.
- A list of required readings (journal articles) will be provided to during the course.

**26. Additional information:**

Attending evaluation and therapy sessions is required

Name of Course Coordinator: Yaser Natour--Signature: -  ----- Date: -----

Head of curriculum committee/Department Dr. Hanadi Bani Hani Signature: HBH

Head of Department: Dr. Hanadi Bani Hani      Signature: HBH

Head of curriculum committee/Faculty: Prof.Ziad Hawamdeh      Signature: Z.H

Dean: Prof.Ziad Hawamdeh      Signature: Z.H

**Copy to:**

Head of Department  
Assistant Dean for Quality Assurance  
Course File

Appendix  
Grading Rubric for the Research Paper

<i>CATEGORY</i>	<i>4</i>	<i>3</i>	<i>2</i>	<i>1</i>
Introduction/ Research paper _____	*exceptional introduction that grabs interest of reader and states topic. **research paper is exceptionally clear, arguable, well-developed, and a definitive statement.	*proficient introduction that is interesting and states topic. **research paper is clear and arguable statement of position.	*basic introduction that states topic but lacks interest. **research paper is somewhat clear and arguable.	*weak or no introduction of topic. **paper's purpose is unclear/research paper is weak or missing.
Quality of Information/ Evidence _____	*paper is exceptionally researched, extremely detailed, and historically accurate. **information clearly relates to the research paper.	*information relates to the main topic. **paper is well-researched in detail and from a variety of sources.	*information relates to the main topic, few details and/or examples are given. **shows a limited variety of sources.	*information has little or nothing to do with the research paper. **information has weak or no connection to the research paper.
Support of Research paper/Analysis _____	*exceptionally critical, relevant and consistent connections made between evidence and research paper. **excellent analysis.	*consistent connections made between evidence and research paper **good analysis.	*some connections made between evidence and research paper. **some analysis.	*limited or no connections made between evidence and research paper. **lack of analysis.
Organization/ Development of Research paper _____	*exceptionally clear, logical, mature, and thorough development of research paper with excellent transitions between and within paragraphs.	*clear and logical order that supports research paper with good transitions between and within paragraphs.	*somewhat clear and logical development with basic transitions between and within paragraphs.	*lacks development of ideas with weak or no transitions between and within paragraphs.
Conclusion _____	*excellent summary of topic with concluding ideas that impact reader. **introduces no new information.	*good summary of topic with clear concluding ideas. **introduces no new information.	*basic summary of topic with some final concluding ideas. **introduces no new information.	*lack of summary of topic.
Style _____	*style are not only appropriate to the given audience and purpose, but also show originality and creativity. **word choice is specific, purposeful, dynamic and varied. ***sentences are clear, active (subject-verb-object), and to	*style appropriate to the given audience and purpose. **word choice is specific and purposeful, and somewhat varied throughout. ***sentences are mostly clear, active (SVO), and	*style somewhat appropriate to given audience and purpose. **word choice is often unspecific, generic, redundant, and clichéd. ***sentences are somewhat unclear; excessive use of passive voice.	*style inappropriate or do not address given audience, purpose, etc. **word choice is excessively redundant, clichéd, and unspecific. ***sentences are very unclear.

Grammar/Usage _____	the point. *control of grammar, usage, **almost entirely free of spelling, punctuation, and grammatical errors.	to the point. *may contain few spelling, punctuation, and grammar errors.	*contains several spelling, punctuation, and grammar errors which detract from the paper's readability.	*so many spelling, punctuation, and grammar errors that the paper cannot be understood.
Citation Format _____	<i>*conforms to MLA rules for formatting and citation of sources are perfect.</i>	<i>*conforms to MLA rules for formatting and citation of sources with minor exceptions.</i>	<i>*frequent errors in MLA format.</i>	<i>*lack of MLA format/numerous errors.</i>
Works Cited/Bibliography _____	*entries entirely correct as to MLA format.	*entries mostly correct as to MLA format.	*frequent errors in MLA format.	*lack of MLA format/numerous errors.

The grade will be converted to be out of 30 points