

Para-Medical Program

specialization	Audiology technician
Course Number	020815111
Course Title	Introduction to Audiology
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to provide the student with the basic knowledge of anatomy and the physiology of hearing, ear, nose and throat, and its implications.

Course Objectives:

At the end of the course the student should:

1. Be able to understand what is audiology and make main ideas about audiology.
2. Be able to understand the types of hearing tests.
3. Be able to evaluate patient hearing.
4. Be able to know the types of devices used in audiology .

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	introduction	<ul style="list-style-type: none"> - What is audiology - Diagnostic audiological tests - Types of hearing loss - what is hearing threshold - what is degrees of hearing losas 	3
2	Otoscopic examination and tuning fork test	<ul style="list-style-type: none"> - identify the otoscope and its parts - How to use otoscope and what we can see by otoscope - Tuning fork test: rinne, weber test 	6
3	Anatomy and physiology of hearing	<ul style="list-style-type: none"> - Basic anatomy of ear: external , middle and inner ear - Basic Physiology of hearing - Define hearing threshold, intensity, frequency and instructions 	9
4	Pure tone audiometry	<ul style="list-style-type: none"> - Define hearing threshold, intensity, frequency and instructions - Conductive and sensory neural HL - Mixed and non-organic HL - Air conduction and bone conduction coparaison 	9
5	Tympanogram	<ul style="list-style-type: none"> - Description of Tympanometry types - Acoustic reflex, ipailatral/ contralatral comparison - Acoustic reflex decay 	6
6	Auditory evoked potentials (ABR)	<ul style="list-style-type: none"> - A brief about ABR - Waves - Parameters of ABR 	6

7	Otoacoustic emission	<ul style="list-style-type: none"> - Define otoacoustic emission - Types of otoacoustic emission - Screening test for infants 	6
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Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Marten, F. N. & Clark, J.G. Introduction to Audiology (12th ed.)2015.
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815121
Course Title	Anatomy and physiology of hearing
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to provide the student with the basic knowledge of anatomy and the physiology of hearing, ear, nose and throat, and its implications.

Course Objectives:

At the end of the course the student should:

1. Be able to understand the anatomy and the physiology of the ear, nose and throat.
2. Be able to understand the main parts of the ear, nose and throat.
3. Understand the physiology of the external ear.
4. Understand the physiology of the middle ear.
5. Understand the physiology of the inner ear and the auditory nerve.
6. Understand the physiology of hearing through the air and bone conduction pathways.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	The external ear	<ul style="list-style-type: none"> – The anatomy and the physiology of the external ear – Pinna, – External auditory meatus – Tympanic membrane. – The external auricle, the external ear canal, the ear canal resonance, head diffraction gain. 	7
2	The middle ear	<ul style="list-style-type: none"> – The anatomy and the physiology of the middle ear – Mastoid antrum – middle ear cavity, – Eustachian tube – The tympanic membrane, the ossicles, the middle ear muscles, the middle ear impedance transformer. 	9
3	Inner ear:	<ul style="list-style-type: none"> – The anatomy and the physiology of the Inner ear – cochlea, – vestibular, – Vestibule-cochlear nerve. – The traveling wave theory, theories of cochlear mechanism, basilar membrane, the inner hair cells, the outer hair cells 	9
4	The Nose	<ul style="list-style-type: none"> – The anatomy and the physiology of the Nose – The external nose, – internal nose, – sinuses and relations 	7
5		<ul style="list-style-type: none"> - Anatomy of the throat, mouth and the pharynx. 	6

	Throat, the mouth , the pharynx	- The physiology of the voice box	
6	The auditory nerve	- The anatomy and The physiology of the auditory nerve, response to tone, frequency resolution as a function of intensity and type of stimulation	7

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Seikel, john A. (2013) Anatomy and Physiology for Speech , Language , and Hearing
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815111
Course Title	Fundamental of Acoustics
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to teach the student about the fundamental of acoustics which are essential for understanding Audiology.

Course Objectives:

At the end of the course the student should:

1. Understand the meaning of acoustics, sound and its propagations.
2. Understand the units of noise measurements.
3. Understand the international standards for audiometric measurements.
4. Understand the effect of reverberation and ambient noise on hearing threshold measurements.
5. Understand the principles of sound transmission loss between partitions.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	The physical properties of sound	vibration and waves, sound power , energy and intensity, Decibels, dB SPL, dB (C), dB (w). wave length and frequency, units, frequency spectrum	15
2	The measurement of acoustic properties	The measurement of sound power level, free field testing, The ambient noise and its affect on hearing, The measurement of absorption Coefficient.	15
3	Principles of noise control	Sound transmission through partitions, sound installation, sound absorption in room, Vibration - Isolation.	15

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Springer Handbook of Acoustic , 2015 edited by Thomas Rossing.
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815131
Course Title	Ear , nose , throat diseases
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Course Description:

This course is directed to provide the student with the basic knowledge about Ear, Nose and Throat diseases

Objectives:

At the end of the course the students should:

1. Know the main ear diseases and their treatment that effect on hearing and balance.
2. Know the main diseases of throat and nose and their treatment.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	Nose	<ul style="list-style-type: none"> - Nasal diseases. - Injuries of nose and face. - Epistaxis - Nasal infection - The catarrhal children - Sinusitis - Tumors and sinuses of nose . 	12
2	pharynx	<ul style="list-style-type: none"> - Investigation of pharynx diseases. - Infection of pharynx. - Tonsils and adenoids. - Neck space infections - Tumors of the pharynx 	9
3	larynx	<ul style="list-style-type: none"> - .Laryngeal diseases. - Voice problem. - Laryngeal infections. - Tumors of the larynx. - - Tracheostomy 	9
4	Disease of the ear	<p>Atresai Microtia Otoitis externa Tumours exotosis</p> <ul style="list-style-type: none"> - Middle ear diseases. Acute otitis media Chronoic suppurative otitis media Eustachian tube dysfunction Middle ear effusion Tympnosclerosis Cholesteatoma Otosclerosis Ossicular discontinuity 	15

		Mastoditis - Inner ear diseases Cochlear pathology Tumours Ototoxicity Multiple sclerosis Miniers disease -	
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Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Seikel, john A. (2013) Anatomy and Physiology for Speech , Language , and Hearing
- Scoot Browns Hand book of otolaryngology 2012
- Related articles from nursing Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815113
Course Title	Adult Audiology
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to teach the students the conventional hearing measurement for adults and children a above the age 0f 14 years. With the on the advanced technology in detection of hearing loss. And to provide the student with the techniques and strategies used to differentiate a mong different diagnosis.

Course Objectives:

At the end of the course the students should:

1. Understand the theories and principles of conducting pure tone audiometry, tympanometry, and acoustic reflexes.
2. Be able to carry out pure tone audiometry, and tympanometry.
3. Be able to carry out otoacoustic emissions.
4. Be able to carry out auditory brainstem audiometry.
5. Understand the theories and principles of masking.
6. Interpret the result of pure tone audiogram and tympanometry
7. To correlate and reach the accurate diagnosis based on all complementary tests.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	Introduction	<ul style="list-style-type: none"> - Anatomy and physiology of the ear. - Types of hearing loss. - dB units and Hz. - Resonance 	3
2	Pure tone Air conduction audiometry	<ul style="list-style-type: none"> - Determining auditory threshold. - Threshold of audibility. - Threshold testing procedure. - Implications of the result 	9
3	Clinical masking;	<ul style="list-style-type: none"> - Introduction about masking - The rational of masking - Effective of masking and critical bandwidth concept. - Theory of masking - - The major problem of masking; under masking and over masking 	9
4	Bone conduction testing	<ul style="list-style-type: none"> - Mechanism of bone conduction. - calibrations of bone conduction - - Procedure of testing bone conduction - masking - occlusion effect - sensorineural acuity level test 	6
5	Tympanometry	<ul style="list-style-type: none"> - The basic principle of acoustic immitance. - Procedure of tympanometry - Clinical use of tympanometry. 	6

		– Evaluation of tympanometry result	
6	Stapedial reflexes	<ul style="list-style-type: none"> – Anatomy and physiology of acoustic reflex – Acoustic reflex threshold – Procedure. <p>Diagnostic applications of the acoustic reflex measurement</p>	6
7	Otoacoustic emission	<ul style="list-style-type: none"> – Physiology of otoacoustic emission. – Types of otoacoustic emission. – Theories of otoacoustic emission. – – The importance of otoacoustic emission 	6
8	Auditroy Brainstem audiometry	<ul style="list-style-type: none"> – Anatomy of brainstem pathways. – Physiology of Brainstem audiometry. – Preparation of patient for auditory brainstem audiometry. – Procedure for Brainstem audiometry 	6

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore.
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.



Para-Medical Program

specialization	Audiology technician
Course Number	020815114
Course Title	Adult audiology/practice
Credit Hours	(2)
Theoretical Hours	(0)
Practical Hours	(6)

Course description :

Is to provide the student with practical training on conducting otoscopic examination, tuning fork tests and using audiometers and tympanometers, reflexes, reflex decay, otoacoustic emission and brainstem audiometry.

Course Objectives:

The student should:

1. Understand the principles and perform otoscopic examinations.
2. Understand the principles and perform tuning fork tests.
3. Have an idea about the audiometer and tympanometer and how to use them properly.
4. Be able to carry out otoscopic examination , brainstem audiometry, puretone audiometry, tympanometry, reflexes and reflex decay.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	Otosopic examination and tuning fork tests.	Observation of otoscopic and tuning fork tests.	2
2	Pure tone Air conduction audiometry	Determining auditory threshold. – Threshold of audibility. – Threshold testing procedure. – Implications of the result	6
3	Clinical masking;	Introduction about masking – The rational of masking – Effective of masking and critical bandwidth concept. – Theory of masking – The major problem of masking; under masking and over masking	4
4	Bone conduction testing	Mechanism of bone conduction. – calibrations of bone conduction – Procedure of testing bone conduction – masking – occlusion effect – sensorineural acuity level test	4
5	Tympanometry	procedure for carrying out tympanomerty – interpretation of tympanomrty results	4
6	Stapedial reflexes	Procedures for carrying out reflexes and reflex decay	4

7	Otoacoustic emission	Procedure for carrying out otoacoustic emission. – Interpretation of the results.	4
8	Auditory Brainstem audiometry	Procedure for preparation. – Procedure for carrying out the test. – Interpretation of the result.	4

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	30%	--/--/----
	Report	20%	--/--/----
	Final Exam	50%	--/--/----
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore.
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815141
Course Title	Hearing aids
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Course description :

To teach the student the conventional and digital hearing aids and their uses and the ear molds. and how to make an ear impression .

Course Objectives:

At the end of the course the student should:

1. Understand the meaning and the components of the hearing aid system.
2. Understand the types of hearing aids and their components.
3. Understand the advantages and disadvantages of each type of hearing aid.
4. Understand the method of daily checking of hearing aids.
5. Know the causes of feedback and how to solve the problems.
6. Know the types of ear molds. The material used for ear mold production.
7. Understand and perform the ear mold modifications.

Detailed Course Description

Unit Number	Unit Name	Unit content	Time needed
1	Introduction	of hearing loss – dB units and frequency range. – The resonances for using hearing aids	3
2	Types of hearing aids and the advantages and disadvantages of each type.	worn aid, post aural aid, molded aid (cic, itc, ite), bone conduction aid, spectacles aid, crosses aid, implantable aid,	9
3	The main components of hearing aids	Battery, Microphone, Amplifier, tone controls, output limiters	9
4	Technical aspects related to the efficient use of hearing aids:	Guideline on the effective day to day use of hearing aids. – Hearing aid test box. – Real ear and coupler hearing aids evaluation. – The current standards for testing the hearing aids performance: ISO. – IEC, ANSI, and HAIC.	9
5	Feed-back:	– Causes and managements	6
6	Ear mold	of ear mold – Modification of the ear mold. – Materials of the ear mold	9

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815142
Course Title	Hearing aids / practice
Credit Hours	(2)
Theoretical Hours	(0)
Practical Hours	(6)

Course description:

To provide the student with practical training on hearing aids and hearing aid fitting.

Course Objectives:

At the end of the course the student should:

1. Be able to identify the main components of different types of hearing aids.
2. Be capable to carry out the daily hearing aid check for all types of hearing aids.
3. Be able to test the performance of different types of hearing aids.

Detailed Course Description

Unit Number	Unit Name	Unit content	Time needed
1	Identification of the main components of different types of hearing aids	Microhone. Amplifier Reciever Battery compartment On/ off switches. Trimmers. BTE, Molded hearing aid, eye glasses hearing aid, bone conduction hearing aid, implanted hearing aids, cochlear implant.	4
2	Observation of daily hearing aid checks up.	The use of stethoscope. Hearing aid test box. Probe microphone measurements.	4
3	Practical training on testing the hearing aid performance	Sound field testing of hearing aid . Amplifications selection criteria. Hearing aid test box. Programmable hearing aids.	6
4	Practical training on faults finding	Ear mold tubing, venting and damping. Whistling Feedback.	6
5	Observation hearing aid fitting clinic	Hearing aid testing in 2 cc coupler. Real ear measurements. Digital hearing aids programming.	6
6	Ear mold	Ear mold configuration. Ear mold materials. Ear mold modification: venting, tubing, Horn	6

Evaluation Strategies:

Exams		Percentage	Date
Exams	Midterm exam	30%	--/--/----
	Report	20%	--/--/----
	Final Exam	50%	--/--/----
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815115
Course Title	Pediatric audiology
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

Is aimed to teach the student the principles of screening and diagnostic hearing measurements for children. The conventional and advanced

Course Objectives:

At the end of the course the student should:

1. Understand the principles of screening audiometer.
2. Be able to carry out screening audiological investigation for pre- school and school children.
3. Observe pediatric diagnostic clinic.
4. Be able to carry out the conventional and advanced technology in testing .

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	A public health perspective on childhood hearing impairment	Mode of auditory domains. Audiological health needs for children Epidemiology of childhood hearing impairment Risk factors for childhood hearing impairment Etiology of childhood hearing impairment .	9
2	Otological considerations in the first 5 years of life	Pre and per natal causes of deafness. Deafness syndromes. Postnatal causes of sensor neural hearing loss.	9
3	Screening hearing tests from 6 months to 5 years	Theories of screening audiometry Distraction tests Co-operative tests Performance tests Play pure tone audiometry.	9
4	Diagnostic hearing tests from 6 months to 5 years	Distraction tests Co-operative tests Performance tests Visual reinforcement audiometry Play pure tone audiometry McCormick toy discrimination test .	9
5	Advance audiological investigations	Otoacoustic emissions Auditory Brain stem evoked responses.	9

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815116
Course Title	Pediatric audiology/ practice
Credit Hours	(2)
Theoretical Hours	(0)
Practical Hours	(6)

Brief Course Description:

The course is aimed to provide the student with practical training on the pediatric hearing assessment.

Course Objectives:

At the end of the course the student should:

1. Understand the behavioral screening of hearing tests.
2. Be able to carry out the behavioral screening hearing tests.
3. Be able to assist in diagnostic behavioral hearing tests.
4. Be able to carry out tympanometry.
5. Be able to carry out reflexes and reflex decay.
6. Be able to carry out otoacoustic emission.
7. Be able to carry out brainstem audiometry.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	Demonstration of Behavioral screening of hearing tests	Behavioral observation of heart beat and respiratory system. Auditory Reflexes Otoacoustic emission Play audiometry, Visual reinforcement audiometry. Tympanometry , Acoustic reflexes and reflex decay. Brainstem audiometry. Speech discrimination tests.	8
2	Observation of parent guidance and counseling clinic	Counseling the parents about the importance of rehabilitation. Counseling strategies. Measurements the effectiveness of counseling strategies.	8
3	Observation of hearing aid evaluation clinic using behavioral test.	Hearing aid selection criteria for children. Prescribing a hearing aid Types of hearing aids Hearing aid performance and fitting.	8
4	Practical training on Screening behavioral audiometry. And play pure tone audiometry.	Pure tone audiometry, play audiometry. Visual reinforcement audiometry, otoacoustic emissions, Brain stem audiometry, Tympanometry and reflexes.	8

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	30%	--/--/----
	Report	20 %	
	Final Exam	50%	--/--/----
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815151
Course Title	Rehabilitation in Audiology
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to provide the student with the theoretical aspects of habilitation and rehabilitation in Audiology.

Course Objectives:

At the end of the course the student should:

1. Understand the concept of rehabilitation and habilitation.
2. Understand the effect of hearing loss on infants, children and adults.
3. Understand the counseling and guidance skills.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time needed
1	Introduction to habilitative Audiology	What is aural rehabilitation? Introduction to the handicap of hearing impairment. Psychological and economic profile of the hearing impaired and deafness. Vocational impact of hearing impairment and vocational counseling of the hearing impaired.	15
2	Habilitative pediatric Audiology	Early identification: principles and practice. Amplification of hearing impaired children. Language development for children. Assessment and intervention with school age hearing impaired. Management of educational setting.	15
3	Counseling and guidance	Introduction to counseling and guidance. Conveying diagnostic information. Genetic counseling. Emotional responses to hearing loss. Counseling children with hearing loss and their families. Counseling for paediatric amplification. Educational counseling / talking with parents and school persons	15

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Adult Audiological Rehabilitation, 2013 by Joseph J. Montano, Jaclyn B. Spitzer
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815152
Course Title	Rehabilitation in Audiology/ practice
Credit Hours	(2)
Theoretical Hours	(0)
Practical Hours	(6)

Brief Course Description:

This course is aimed to provide the student with practical training on habilitation and rehabilitation in Audiology.

Course Objectives:

At the end of the course the student should:

1. Understand the concept of rehabilitation and the requirements for rehabilitation programs.
2. Know the devices that are used for rehabilitation.
3. Be able to assist in rehabilitation programmes for adults and children.
4. Be able to use the devices which are usually used in rehabilitation

Detailed Course Description

Unit Number	Unit Name	Unit content	Time needed
1	Introduction to habilitative Audiology	aural rehabilitation? Introduction to the handicap of hearing impairment. Psychological and economic profile of the hearing impaired and deafness. Vocational impact of hearing impairment and vocational counseling of the hearing	8
2	Habilitative pediatric Audiology	identification: principles and practice. Amplification of hearing impaired children . Language development for children. Assessment and intervention with school age hearing impaired. Management of educational setting.	12
3	Counselling and guidance	Introduction to counseling and guidance. Conveying diagnostic information. Genetic counseling. Emotional responses to hearing loss. Counseling children with hearing loss and their families. Counseling for paediatric amplification. Educational counseling / talking with parents and school persons	12

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	30%	--/--/----
	Report	20%	--/--/----
	Final Exam	50%	--/--/----
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Adult Audiological Rehabilitation, 2013 by Joseph J. Montano, Jaclyn B.Spitzer
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815161
Course Title	Audiological Evaluation (I)
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to provide the student with the theoretical aspects of audiological evaluation that help diagnose the patient's condition and treatment.

Course Objectives:

At the end of the course the student should:

1. Understand all audiological tests that used to diagnose the cases.
2. Be able to do this tests by using audiological equipments.
3. Understand the counseling and guidance skills.

Detailed Course Description

Unit Number	Unit Name	Unit content	Time needed
1	Clinical masking	<ul style="list-style-type: none"> - What is masking? - The need for masking. - Masking noise selection. - Clinical masking procedures. 	6
2	Pure tone evaluation	<ul style="list-style-type: none"> - Equipment (audiometer, transducers, speakers) - Measuring pure tone thresholds - Special populations (tinnitus , pseudohypacusis , auditory neuropathy , aging , acoustic tumors , meniere's disease , noise induced hearing loss and acoustic truma , ototoxicity , otitis media , tympanic membrane perforation. 	12
3	Speech audiometry	<ul style="list-style-type: none"> - What is speech audiometry? - Speech audiometry terminology - Speech recognition threshold - Speech recognition in quiet - Speech recognition in noise 	9
4	Typanometry and wideband acoustic immitance	<ul style="list-style-type: none"> - Tympanometric shape - Eustachian tube function tests - Patulous Eustachian tube and assessment - Tympanometry in newborn and infants 	9
5	Acoustic stapedius reflex measurements	<ul style="list-style-type: none"> - Introduction - Anatomy and acoustic stapedius reflex pathways - Measurement of ASR threshold - Acoustic reflexes and disorder 	9

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815262
Course Title	Audiological Evaluation (II)
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to provide the student with the theoretical aspects of _____ audiological evaluation that help diagnose the patient's condition and have ability to interpret results.

Course Objectives:

At the end of the course the student should:

1. Understand all audiological tests that used to diagnose the cases.
2. Be able to do this tests by using audiological equipments.
3. Be able to interpert the results of tests.

Detailed Course Description

Unit Number	Unit Name	Unit content	Time needed
1	Otoacoustic emission	<ul style="list-style-type: none"> - OAE and outer hair cells - Two OAE generation mechanisms - Types of OAE - TEOAEs and DPOAEs - Differential diagnosis of hearing loss - Newborn hearing screening 	6
2	Introduction to auditory evoked potentials	<ul style="list-style-type: none"> - The eighth nerve and auditory brainstem - An overview of auditory evoked potentials 	3
3	Auditory brainstem response : differential diagnosis	<ul style="list-style-type: none"> - Overview of generator sites - Introduction to auditory evoked potential - auditory evoked potential classification - normative aspects of the ABR - factors influencing the normal ABR - retrocochlear pathology 	12
4	Special tests for non-organic hearing loss	<ul style="list-style-type: none"> - Introduction and signs of non-organic hearing loss - The stenger test - Ascending-descending - Swinging story test - The yes-no test - Low-level speech recognition method testing - Acoustic reflexes and ABR - 	6
5	Tinnitus and hyperacusis	<ul style="list-style-type: none"> - Neurophysiological causes , mechanisms and models - Evaluation :medicals - Measuring the tinnitus 	9

		<ul style="list-style-type: none"> - Measuring the reaction of tinnitus - Treatment: counseling , sound therapies , tinnitus activities treatment 	
6	Noise exposure	<ul style="list-style-type: none"> - Measurement of noise exposure - Current perspectives on the pathophysiology of noise-induced hearing loss - Application of weighting filters :dB SPL,dBa,and dBC - Why a notch at 4000 Hz? - Historical development of noise exposure - Noise and its effects on the ear:TTS and PTS - NIHL from single events: acoustic trauma , otoprotectants and reactive oxygen species - Hearing protection devices 	9

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

- Katz. J 2014 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815271
Course Title	Calibration of Audiology Equipment
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

This course is directed to provide the student with the knowledge of calibration of different audiology equipments.

Course Objectives:

At the end of the course the student should:

1. Understand the importance of calibration
2. Understand the current standards for calibration
3. Know the equipment that are used for calibration
4. Be able to calibrate the equipment that is used in audiology.

Detailed Course Description

1	Introduction	The purpose Types of calibration The equipment	15
2	Calibrations	Pure tone audiometer Immittance meter Brain stem evoked response audiometry calibrations	15
3	Parameters	Basic equipment Methods and procedures	15

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	40%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore.
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815272
Course Title	Calibration of Audiology Equipment /practice
Credit Hours	(2)
Theoretical Hours	(0)
Practical Hours	(6)

Brief Course Description:

This course is aimed to provide the student with the practical training on calibration of audiological equipment. Observation calibration of audiometer, immittance and Bera. And Practical training on the equipments and calibration of audiology equipments.

Course Objectives:

At the end of the course the student should:

1. Know the equipments that are needed for calibration
2. Understand the calibration standards.
3. Be able to calibrate pure tone audiometers, immittance meters, and brainstem evoked response audiometer

Detailed Course Description

1	Introduction	The purpose Types of calibration The equipment	8
2	Calibrations	Pure tone audiometer Immittance meter Brain stem evoked response audiometry calibrations	12
3	Parameters	Basic equipment Methods and procedures	12

Evaluation Strategies:

Exams		Percentage	Date
Exams	midterm exam	30%	--/--/----
	Report	20%	--/--/----
	Final Exam	50%	--/--/----
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Related articles from audiology Journals.

Para-Medical Program

specialization	Audiology technician
Course Number	020815271
Course Title	Introduction to cochlear implantation
Credit Hours	(2)
Theoretical Hours	(1)
Practical Hours	(3)

Brief Course Description:

This course is aimed to provide the student with the theoretical aspects of cochlear implant and the pre implantation audiological tests. And to provide the student with practical training on how to fit the cochlear implant system and how to program the external device

Objectives:

At the end of the course the student should:

1. Should be able to understand who is candidate for cochlea implant surgery.
2. Should be able to understand the anatomy of cochlea
3. Should be able to carry out all audiological procedures for all group ages pre implantation.
4. Should be able to know each type of cochlear implant system
5. Should be able to differentiate between hearing aid and cochlear implant system.
6. Should be able to carry out all tests required intra operation and post operation.
7. Should be able to know the parts of cochlear implant system.
8. Should be able to carry out the auditory verbal training program after implantation.

Detailed Course Description

1	Cochlear implant system	Parts of cochlear implant: External part: speech processor, battery compartment, transmitting cable, coil, on / off switch, programs, volume control, Internal part: receiver, intracochlear and extra cochlear electrodes. Diagnostic interface box.	
2	Anatomy of the cochlea	Scala tympani. Scala media Scala vestibule Auditory nerve	
3	Pre implant audiological tests	Otoscopic examination Pure tone audiometry Visual reinforcement audiometry, Tympanometry Otoacoustic emission Hearing aid fitting Auditory brain stem audiometry Speech discrimination tests. Expressive and receptive language CT –scan MRI	
4	Intra op and post op tests	Telemetry- impedance measurements. Electrical stapedial reflex measurements Neural response telemetry Brainstem audiometry.	
5	Auditory verbal training	Definition of auditory verbal training Stages of auditory verbal training Strategies in auditory verbal training.	

Evaluation Strategies:

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Exams		Percentage			Date
			Theoretical	practical	
	Midterm Exam	50%	40%	10%	--/--/----
	Final exam	50%	35%	15%	--/--/----
total		100%			

Teaching Methodology:

- ❖ Discussion. Simulation. Assignments and Skill demonstrations at clinical sitting.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.



Para-Medical Program

specialization	Audiology technician
Course Number	020815271
Course Title	Training
Credit Hours	(3)
Theoretical Hours	(0)
Practical Hours	(280 training hours)

Brief Course Description: This course is aimed to provide the student with the practical training on all audiological procedure to achieve the correct diagnosis

Objectives:

At the end of the course the student should:

1. Should be able to take history from the patient
2. Should be able to carry out all audiological procedures for all group ages
3. Should be able to know each type of hearing loss
4. Should be able to carry out all tests required to differentiate among types of hearing loss

Detailed Course Description

1	Patients Assessment	hold the otoscope for inspection the ears of infants, children and adult. Land marks of the external and middle ear.	
2	Otoscopic examination	Tuning fork tests Rinne, Webber tests	
3	Tuning fork tests	conduction using headphones, insert earphones and sound field testing. Placement of bone vibrator with masking. How to perform hearing tests using masking Types of masking noises	
4	Air and bone conduction testing with the use of masking	holding, Tips selections. Ipsilateral and contralateral testing of reflexes and reflex decay. Tone decay testing Stinger tests	
5	Tympanometry acoustic reflexes Tone decay and reflex decay	Otoacoustic emissions, Brainstem audiometry. Visual reinforcement audiometry. Speech discrimination tests .	
6	Screening hearing tests from 6 months to 5 years	molded hearing aids. Implantable hearing aids.cochlear implants	
7	Main components of different types of hearing aids	aid test box Programmable hearing aid fitting The effectiveness of hearing aid selection	

8	Daily hearing aid checks up and testing of the hearing aid performance	importance of counseling Counseling strategies Measurements of counseling effectiveness.	
9	Counseling and guidance	carry out sound level meters, frequency analysis Noise measurements	
10	Noise measurement	of personnel protections. Engineering strategies. Standards for noise control Permissible noise exposure	
11	Hearing conservation program	The use of sound level meter. Air conduction and bone conduction calibration. Admittance calibration Brainstem audiometry calibration. Sound field calibrations	

Evaluation Strategies:

Exams		Percentage	Date
Exams	Midterm exam	30%	--/--/----
	Report	10%	--/--/----
	Final Exam	50%	--/--/----
Homework and projects		10%	
Total		100%	

Teaching Methodology:

❖ Discussion. Simulation. Assignments and Skill demonstrations at clinical sitting.

References:

- Katz. J 2015 hand book of audiology. Williams and Wilkins , Baltimore
- Clinical audiology : An Introduction by Brad A.Stach,2012
- Related articles from audiology Journals.