

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126101
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. 	
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. 	
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. 	
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 	
5.	Throat, the mouth,	<ul style="list-style-type: none"> - Anatomy of the throat, mouth and the 	

	the pharynx	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.	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126111
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	
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.	
3.	Principles of noise control	Sound transmission through partitions, sound installation, sound absorption in room, Vibration Isolation.	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal Creek Boulevard. Austin Texas.

Related articles from nursing Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126221
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.

Unit Number	Unit Name	Unit content	Time Needed
	Nose	<ul style="list-style-type: none"> - Nasal diseases. - Injuries of nose and face. - Epistaxis - Nasal infection - The catarrhal children - Sinusitis - Tumors of nose and sinuses. 	
	Pharynx	<ul style="list-style-type: none"> - Investigation of pharynx diseases. - Infection of pharynx. - Tonsils and adenoids. - Neck space infections - Tumors of the pharynx 	
	Larynx	<ul style="list-style-type: none"> - .Laryngeal diseases. - Voice problem. - Laryngeal infections. - Tumors of the larynx. - Tracheostomy 	



	<p>Diseases of the ear</p>	<ul style="list-style-type: none"> - External ear diseases. Atresai Microtia Otoitis externa Tumours exotosis - Middle ear diseases. Acute otitis media Chronoic suppurative otitis media Eustachian tube dysfunction Middle ear effusion Tymnosclerosis Cholesteatoma Otosclerosis Ossicular discontinuity Mastoditis - Inner ear diseases Cochlear pathology Tummours Ototoxicity Multiple sclerosis Miniers disease 	
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Evaluation Strategies:

Exams		Percentage	Date
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Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

Scot Browns Hand book of otolaryngology 2004

Related articles from nursing Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126231
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 Of 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
	Introduction	<ul style="list-style-type: none"> - Anatomy and physiology of the ear. - Types of hearing loss. - dB units and Hz. - Resonance 	
	Pure tone Air conduction audiometry	<ul style="list-style-type: none"> - Determining auditory threshold. - Threshold of audibility. - Threshold testing procedure. - Implications of the result 	
	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 	
	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 	
	Tympanometry	<ul style="list-style-type: none"> - The basic principle of acoustic immitance. - Procedure of tympanometry - Clinical use of tympanometry. - Evaluation of tympanometry result 	
	Stapedial reflexes	<ul style="list-style-type: none"> - Anatomy and physiology of acoustic reflex - Acoustic reflex threshold - Procedure. 	

		<ul style="list-style-type: none"> - Diagnostic applications of the acoustic reflex measurement 	
	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 	
	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 	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----

Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore.

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126232
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
	Otosopic examination and tuning fork tests.	Observation of otoscopic and tuning fork tests.	

	Pure tone Air conduction audiometry	<ul style="list-style-type: none"> - Determining auditory threshold. - Threshold of audibility. - Threshold testing procedure. - Implications of the result 	
	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 - 	
	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 	
	Tympanomrty	<ul style="list-style-type: none"> - procedure for carrying out tympanomrty - interpretation of tympanomrty results 	
	Reflexes and reflex decay	<ul style="list-style-type: none"> - Procedures for carrying out reflexes and reflex decay 	
	Otoacoustic emission	<ul style="list-style-type: none"> - Procedure for carrying out otoacoustic emission. - Interpretation of the results. 	

	Brain stem audiometry	<ul style="list-style-type: none"> - Procedure for preparation. - Procedure for carrying out the test. - Interpretation of the result. 	
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Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore.

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126241
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
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	Introduction	<ul style="list-style-type: none"> - Types of hearing loss - dB units and frequency range. - The resonances for using hearing aids 	
	Types of hearing aids and the advantages and disadvantages of each type:	<ul style="list-style-type: none"> - Body worn aid, post aural aid, molded aid (cic, itc, ite), bone conduction aid, spectacles aid, crosses aid, implantable aid, 	
	The main components of hearing aids	<ul style="list-style-type: none"> - Battery, Microphone, Amplifier, tone controls, output limiters 	
	Technical aspects related to the efficient use of hearing aids:	<ul style="list-style-type: none"> - 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. 	
	Feed-back:	<ul style="list-style-type: none"> - Causes and managements 	
	Ear mold	<ul style="list-style-type: none"> - Types of ear mold - Modification of the ear mold. - Materials of the ear mold. 	

Evaluation Strategies:

Exams	Percentage	Date
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Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126242
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	Unit Name	Unit content	Time
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Number			Needed
	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.	
	Observation of daily hearing aid checks up.	The use of stethoscope. Hearing aid test box. Probe microphone measurements.	
	Practical training on testing the hearing aid performance	Sound field testing of hearing aid . Amplifications selection criteria. Hearing aid test box. Programmable hearing aids.	
	Practical training on faults finding	Ear mold tubing, venting and damping. Whistling Feedback.	
	Observation hearing aid fitting clinic.	Hearing aid testing in 2 cc coupler. Real ear measurements. Digital hearing aids programming.	
	Ear mold	Ear mold configuration. Ear mold materials. Ear mold modification: venting, tubing, Horn	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

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- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126251
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
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	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.	
	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.	
	Screening hearing tests from 6 months to 5 years	Theories of screening audiometry Distraction tests Co-operative tests Performance tests Play pure tone audiometry.	
	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	
	Advance audiological investigations	Otoacoustic emissions Auditory Brain stem evoked responses.	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heinemann . Linacre House, Jordan Hill, Oxford OX2 8DP.

Paediatric audiology (0- 5) years 2003. Maccormick . Birmenkham uk.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126252
Course title	Pediatric Audiology /Practice
Credit Hours	(2)
Theoretical Hours	(0)
Practical Hours	(2)

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 carryout the behavioral screening hearing tests.
3. Be able to assist in diagnostic behavioral hearing tests.
4. Be able to carry out tympanomrty.
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 audiomrty.

Detailed Course Description:

Unit Number	Unit Name	Unit content	Time Needed
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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.
Observation of parent guidance and counseling clinic	Counseling the parents about the importance of rehabilitation. Counseling strategies. Measurements the effectiveness of counseling strategies.
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.
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.

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----

	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126261
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
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	<p>Introduction to habilitative Audiology</p>	<p>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.</p>	
	<p>Habilitative pediatric Audiology</p>	<p>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.</p>	
	<p>Counselling and guidance</p>	<p>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</p>	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----

	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore
Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman
. Linacre House, Jordan Hill, Oxford OX2 8DP.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal
Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126262
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
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	<p>Introduction to habilitative Audiology</p>	<p>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.</p>	
	<p>Habilitative pediatric Audiology</p>	<p>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.</p>	
	<p>Counseling and guidance</p>	<p>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</p>	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

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Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman
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Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126271
Course title	Industrial Audiology
Credit Hours	(3)
Theoretical Hours	(3)
Practical Hours	(0)

Brief Course Description:

. This course is aimed to provide the student with the knowledge of the effect of the noise exposure on hearing.

Course Objectives:

At the end of the course the student should:

1. Understand the international regulations for noise exposure.
2. Understand the risk of damages due to noise exposure.
3. Know the methods of testing and equipments that are used to measure noise exposure levels.
4. Understand the methods of protection from noise exposure.

Detailed Course Description:

Unit	Unit Name	Unit content	Time
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Number			Needed
	Noise pollution	Definition of noise pollution The basic principles of noise measurements Determination of noise exposure.	
	Noise exposure measurement	The units used for noise measurement The equipments used for noise measurement The international methods for measuring noise exposure	
	Noise induced hearing loss	Temporary and permanent shifts and acoustic trauma Effects of noise exposure on pilots and divers The relationship between noise exposure and noise induced hearing loss Presbycusis in industrial in industrial and non industrial society. Non auditory effects of noise exposure on health.	
	guidelines for assessment and control of noise	International standards for noise exposure time the current hearing damage: risk criteria	
	Hearing conservation	The concept of hearing conservation The noises Personal hearing protectors The method of evaluation of hearing protectors Employment education	

Evaluation Strategies:

Exams		Percentage	Date
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Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References:

1. Lipscomb D. (1988) hearing conservation in industry, school, and the military. Taylor and Francis.
2. Bruel and Kjeur, (1988) Acoustic noise measurements.
3. Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth- Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126272
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:

Unit	Unit Name	Unit content	Time
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Number			Needed
1.	introduction	The purpose Types of calibration The equipment	
2.	Calibrations	pure tone audiometer, immitance meter, and Brain stem evoked response audiometry calibrations	
3.	Parameters	Basic equipment Methods and procedures.	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

- ❖ Lecture. Discussion. Simulation. Assignments.

References

1. Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore.
 2. ANSI S34-1 (1991) Maximum permissible noise for audiometric room.
 3. ANSI S3-7 Methods for coupler calibration of earphones.
 4. ANSIS3-6 (1989) Specifications for audiometer.
 5. ISO 389 (1989) Acoustic –audiometric test methods Part 1. Basic pure tone air and bone conduction threshold audiometry.
- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126273
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, immitance 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, immitance meters, and brainstem evoked response audiometer

Detailed Course Description

Unit Number	Unit Name	Unit content	Time Needed
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1.	introduction	The purpose Types of calibration The equipment	
2.	Calibrations	pure tone audiometer immitance meter Brain stem evoked response audiometry calibrations	
3.	Parameters	Basic equipment Methods and procedures.	

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

❖ Lecture. Discussion. Simulation. Assignments.

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126281
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 programm 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:

Unit Number	Unit Name	Unit content	Time Needed
	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, intar cochlea and extra Cochlear electrodes. Diagnostic interface box.	
	Anatomy of the cochlea	Scala tympani. Scala media Scala vestibule Auditory nerve	
	Pre implant audiological tests	Otocopic examination Pure tone audiometry Visual reinforcement audiometry, Tymanometry Otoacoustic emission Hearing aid fitting Auditory brain stem audiometry Speech discrimination tests. Expressive and receptive language CT –scan MRI	
	Intra op and post op tests	Telemetry- impedance measurements. Electrical stapedial reflex measurements Neural response telemetry Brainstem audiometry.	
	Auditory verbal training	Definition of auditory verbal training Stages of auditory verbal training Strategies in auditory verbal training.	

Evaluation strategy

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----

	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

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

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

- Related articles from audiology Journals.

Para-Medical Program

Specialization	Audiology Technician
Course Number	21126200
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:

Unit Number	Unit Name	Unit content	Time Needed
	Patients Assessment	Patients personnel data, Patients complains and related symptoms	

Otosopic examination	How to hold the otoscope for inspection the ears of infants, children and adult. Land marks of the external and middle ear.
Tuning fork tests	Perform Tuning fork tests Rinne, Webber tests
Air and bone conduction testing with the use of masking	Air 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
Tympanometry Acoustic reflexes Tone decay and reflex decay	Probe holding, Tips selections. Ipsilateral and contralateral testing of reflexes and reflex decay. Tone decay testing Stinger tests
Screening hearing tests from 6 months to 5 years	Otoacoustic emissions, Brainstem audiometry. Visual reinforcemet audiometry. Speech discrimination tests .
Main components of different types of hearing aids	BTE, molded hearing aids. Implantable hearing aids.cochlear implants
daily hearing aid checks up and testing of the hearing aid performance	Hearing aid test box Programmable hearing aid fitting The effectiveness of hearing aid selection
counseling and guidance	The importance of counseling Counseling strategies Measurements of counseling effectivness.
Noise measurement	How to carry out sound level meters, frequency analysis Noise measurements
Hearing conservation program	The use of personnel protections. Engineering strategies. Standards for noise control Permissible noise exposure

	The calibration of audiological equipments	The use of sound level meter. Air conduction and bone conduction calibration. Admittance calibration Brainstem audiometry calibration. Sound field calibrations	
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Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects		10%	
Total		100%	

Teaching Methodology:

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

References:

Katz. J 2003 hand book of audiology. Williams and Wilkins , Baltimore

Dafydd Stephenes.(1997). Otolaryngology. Adult Audiology. Butterworth-Heineman . Linacre House, Jordan Hill, Oxford OX2 8DP.

William F. Rintelmann (1997) Hearing assessment Second edition . 8700 shoal Creek Boulevard. Austin Texas.

- Related articles from audiology Journals.

