| 2 Theory + 1 practical = 3 credits | Introduction to Hearing and Speech Sciences | HCS 111 |
|---|---|---|
| المتطلب السابق:<br><br>**Human Biology**<br><br>**HFSB 101–1**<br><br>**Biology for Health programs**<br><br>**HFSB 102–1** | Exposed to fundamentals of the theory and practice of hearing and speech sciences. Demonstrate understanding of the way in which speech sounds are produced in the vocal tract; the effect of the position of the articulators (tongue, lips, velum, etc.) on speech sounds and the acoustic principles of the auditory discrimination. In addition, demonstrate understanding of Basic concepts in hearing mechanism and assessment.<br>Phonetics<br>Learn Place, manner and voicing characteristics of speech sounds<br>Analysis of speech sounds | |

| 3 Theory = 3 credits | Introduction to psychology | HCS 112 |
|---|---|---|
| المتطلب السابق:<br><br>لايوجد | Demonstrate knowledge of basic theoretical principles of psychology<br>Apply the behavioral theories of psychology<br>Demonstrate knowledge of the normal language and cognition related to development<br>Describe the normal biological foundations for motor, speech, and cognition development and application | |

| 2 Theory<br>= 2 credits | Human Growth and Development | HCS 113 |
|---|---|---|
| المتطلب السابق:<br><br>**Human Biology**<br><br>**HFSB 101–1**<br><br>**Biology for Health programs**<br><br>**HFSB 102–1** | This course focuses on the principles of human development but has a primary focus on infancy through adolescence. Emphasis is placed on theory and data related to the development of cognition, human movement, social, visual, auditory and linguistics skills. Apply the theories of development to best determine the greatest level of involvement. Demonstrate knowledge of the normal sequence of movement, hearing, speech, language, and cognition and describe the normal variations of the developmental sequence. | |

| 2 Theory + 1 Practical = 3 credits | Neurology of Hearing and balance | AUD 221 |
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| المتطلب السابق:<br><br>**Human Anatomy and Physiology**<br><br>**HRS 111** | The objective of this course is to provide the necessary anatomical and physiological background to understand the neurological bases of normal hearing and balance mechanisms. The course covers the anatomy and physiology of the central nervous system which includes the two gross divisions of the central nervous system (i.e., brain and spinal cord). In addition, the course covers the anatomy and physiology of the peripheral nervous system which includes the cranial nerves, the peripheral nerves. The protection and blood supply of the brain are covered. Congenital and vascular lesions that effect hearing and balance. Disorders related to brain injuries is addressed as well. | |

| 2 Theory + 1 clinical = 3 credits | Audiology 2 | AUD 323 |
|---|---|---|
| المتطلب السابق:<br><br>**Audiology 1**<br><br>**AUD 314** | This course aims to provide the students with a theoretical and practical understanding of audiological test procedures and related clinical issues in adult auditory assessment of hearing function in the on-site clinical laboratories..<br><br>**Objectives**<br><br>Administration and interpretation of different advanced tests technique.<br><br>Diagnosis and differential diagnosis of different hearing disorders.<br><br>Detection of site of lesion<br><br>Management of different audiological conditions. | |

| 2 Theory = 2 credits | Ethics and Professional Development | AUD 324 |
|---|---|---|
| المتطلب السابق:<br><br>**Introduction to Hearing and Speech Sciences**<br><br>**HCS 111** | This course discusses theories of ethics and applications to audiology in the clinical, research, academic arenas. Also, in this course students shall honor the responsibility to hold paramount the welfare of persons they serve professionally and to achieve and maintain the highest level of professional competence and performance<br><br>The objectives of this course are to:<br><br>provide an overview of professional, ethical, diagnostic and clinical procedures in audiology. Objectives include:<br><br>To understand professional and ethical issues and organizational systems that legislate the clinical practice in Audiology<br>To understand the role of the audiologist in medical and educational setting including legal, organizational and professional issues related to service delivery options.<br>To understand theoretical, pragmatic and multicultural issues affecting the assessment process. | |

| 1 Theory + 2 clinical = 3 credits | Clinical audiology 1 | AUD 411 |
|---|---|---|
| المتطلب السابق:<br><br>**Audiology (1)**<br>**AUD 314**<br><br>**Audiology (2)**<br>**AUD 323** | This clinical course gives the students the opportunity to practice advanced audiology procedures on patients of selected training hospitals/clinic. Advanced procedures such as Pure tone audiometry, Masking of air and bone conduction audiometry , Immitance testing (tympanometry and acoustic reflexes), Speech audiometry will be practiced by the students under the supervision of the assigned supervisor<br>Enable the students to get audiological hand on experience on pediatric and adult patients.<br>Give students the opportunity to engage on clinical work by practicing history taking and determining the appropriate procedures to be performed<br>Prepare the students to develop effective approach for time management in clinical practice and to develop an approach to prioritize activities.<br>Allow the students to explore management options based on diagnosis, available resources and need. | |

| 2 Theory + 1 clinical = 3 credits | Amplification and Assistive Listening Devices | AUD 412 |
|---|---|---|
| المتطلب السابق:<br><br>**Noise Induced Hearing loss and Conservation of Hearing**<br><br>**AUD 321** | Aim of this course is to provide student with knowledge and skills that makes her be able to understand basic types of amplification and strategies for selection of patients and devices, also she will be able to troubleshoot simple patient and device problems.<br>Provide student with knowledge and skills that makes her be able to understand basic types of amplification<br>Ability to identify patients candidate for amplification and ability to select the appropriate type of amplification<br>Improve students' ability to work with patients<br>Improve their ability to manage simple problems with devices.<br>Counseling patients and thier families regarding using amplification and other assistive devices. | |

| 2 Theory + 1 clinical = 3 credits | Management of Hearing and Balance Disorders | AUD 413 |
|---|---|---|
| المتطلب السابق:<br><br>لا يوجد | This course will approach hearing pathology and balance disorders from a broad perspective beginning with pathophysiology, etiology and audiological assessment. The focus will be on both the pediatric and adult population. Administration and interpretation of audiometric procedures for differential diagnosis of auditory and vestibular pathology will be addressed. It focuses on Management of causes of hearing problems and study of the inter - professional, economic, legal and ethical aspects of program planning and administration. The student will learn how to apply hearing services in a multiplicity of setting and study the relationship between hearing services and educational health, social and industrial programs. Study of the relationships between hearing pathologists and members of allied professionals will be also discussed.<br>Understand hearing and balance pathology disorders from a broad perspective, beginning with pathophysiology, etiology, audiological assessment and management.<br>Study of symptoms of various pathologies and learn the different audiological and vestibular tests to diagnose these pathologies<br>Study of Psychological and social implications of hearing and balance disorders and specific management.. The focus will be on both the pediatric and adult population. | |

| 3 Theory = 3 credits | Medical Aspects of Communication Disorders | AUD 414 |
|---|---|---|
| المتطلب السابق:<br><br>لا يوجد | The course discusses the classification, symptoms, etiology and nature of communication problems. Also, involves ear, nose and throat, and the palatal and orofacial musculatures. Implication for treatment and management will be considered as an integral part of the rehabilitative process Study of Disorders impairing patients' communication abilities, which involve voice, speech, language, hearing, and/or cognition.<br>Recognizing and addressing communication disorders which affects different system isolated or together like ears nose throat or neural diseases. | |

| 2 Theory + 1 clinical = 3 credits | Hearing Screening | AUD 415 |
|---|---|---|
| المتطلب المصاحب:<br><br>**Clinical Audiology (1)**<br><br>**AUD 411** | The course introduces students to the roles of audiologists in the community, workplace settings and working in programs as part of a team. It also covers the three major screening programs; neonatal hearing screening, management of high risk for hearing<br>loss population, and noise induced management.<br>The course introduces students to how to best apply these results to patient care through an evidenced based approach is a central theme<br>Describe the objective of the hearing screening programs.<br>Describe in details the risk factors for hearing loss and population of high risk in neonatology, children, and adults.<br>Describe the procedures, screening equipment and techniques for screening rationale.<br>Administration of neonatal, pediatrics and school hearing screening regimes.<br>Integrate and interpret clinical test results. | |

| 2 Theory + 1 Practical + 1 clinical = 4 credits | Research Methodology & project | AUD 421 |
|---|---|---|
| المتطلب السابق:<br><br>**Biostatistics**<br><br>**HRS 116** | An overview of experimental designs used to conduct a research project in one particular area of audiology. Also to continue to develop practical skills emphasis on research proposal preparation in communicative disorders.<br>To introduce students to the methodologies and practical procedures employed in the<br>conduct and evaluation of research work in communication disorders<br>Enable each student acquire the basic research knowledge and required skills o Understanding of research language<br>Formulation of research topics and fostering the conduct of an independent research<br>project using appropriate methodology and statistical methods. | |

| 1 Theory + 2 clinical = 3 credits | Clinical audiology 2 | AUD 422 |
|---|---|---|
| المتطلب السابق:<br><br>**Clinical Audiology (1)**<br><br>**AUD 411** | This clinical course gives the students the opportunity to practice advanced audiology procedures on patients of selected training hospitals/clinic. Advanced procedures such as Auditory evoked potentials, Otoacoustic emission, and Vestibular assessment will be practiced by the students under the supervision of the assigned supervisor.<br>Enable the students to get audiological hand on experience on pediatric and adult patients.<br>Give students the opportunity to engage on clinical work by practicing history taking and determining the appropriate procedures to be performed<br>Prepare the students to develop effective approach for time management in clinical practice and to develop an approach to prioritize activities.<br>Allow the students to explore management options based on diagnosis, available resources and and need. | |

| | | |
|---|---|---|
| **2 Theory =<br>2 credits** | **Psychosocial Aspects of Hearing Loss** | **AUD<br>423** |
| المتطلب السابق:<br><br>**Psychoacoustics & Sound Perception**<br><br>**AUD 223** | The course is designed to explore those factors affecting the health, wellbeing and communication of hearing impairment people. It will cover linguistic features that characterize and differentiate the normal, demented, depressed and aphasic elderly population. The societal and cultural aspects of children, adult and aging and also age – related changes in accommodating to the social environments.<br>The core of this course focuses on studying the different negative consequences of hearing<br>Impairment.<br>Specifically, this course focuses on psychological and social negative effects accompany hearing loss<br>In addition, this course teaches different coping mechanisms that hearing impaired use. | |

| 2 Theory + 1 clinical = 3 credits | Report Writing and Counseling in Audiology | AUD 424 |
|---|---|---|
| المتطلب السابق:<br><br>**Clinical Audiology (1)**<br><br>**AUD 411**<br><br>المتطلب المصاحب:<br><br>**Clinical Audiology (2)**<br><br>**AUD 422** | This course is designed to explore theories of counseling related to the management of persons with auditory and vestibular disorders. Different approaches for interacting with patients and their families individually and in groups will be addressed. In addition to report writing and using this materials in counseling and referral to other professions.<br>Use basic knowledge of counseling skills to enhance clinical communication and decision-<br>making.<br>Providing patients with data regarding hearing loss and with advice regarding equipment and<br>strategies that will make communication easier<br>Provide informational counseling to children about hearing loss, hearing aids, or<br>communicative strategies.<br>Deal with child's emotional response to their hearing loss, hearing aids, or listening | |

| 2 Theory + 1 clinical = 3 credits | Implantable devices | AUD 425 |
|---|---|---|
| المتطلب السابق:<br><br>**لا يوجد** | The aim of this course is to provide students with knowledge and skills that makes her able to identify patient candidate for cochlear implants and she can use varies strategy of programming and mapping of cochlear implant devices and, also able to troubleshoot simple patients and devices problems<br>Understand the Concept of cochlear implantation, cochlear implant components and cochlear implant candidates<br>Ability to select appropriate candidate for cochlear implant and ability to program and or map patients devices<br>Troubleshoot simple cochlear implants problems<br>Improve their Communication skills and working with patients | |

| 2 Theory + 1 Practical = 3 credits | Anatomy & Physiology of the Hearing and Balance Mechanisms | AUD 222 |
|---|---|---|
| المتطلب السابق:<br><br>**Human Anatomy and Physiology**<br><br>**HRS 111**<br><br>**Introduction to Hearing and Speech Sciences**<br><br>**HCS 111** | The course deals with study of structure, function, and processes of human auditory and balance mechanism. While the student recall basic anatomy and physiology of the auditory system.<br><br>The main aim of this course is to provide detailed discussion of basic anatomical structures involved in hearing and balance mechanisms<br><br>This course should focus on analysing function based on the structure and physiology as well as based on knowledge from other sources like biology and chemistry. | |

| 2 Theory + 1 Practical = 3 credits | Psychoacoustics & Sound Perception | AUD 223 |
|---|---|---|
| المتطلب السابق:<br><br>**Biology for Health programs**<br><br>**HFSB 101–1**<br><br>**Human Biology**<br><br>**HFSB 102–1** | In this course the student will be Able to know the basic physics concepts including fundamental physical characteristics & areas of physics.<br>Acoustics including the basic concept of simple harmonic motion ,concept of resonance .<br>The nature of sound with its fundamental aspects. Acoustics of speech.& Psychoacoustics.<br>( definition, basic principles of the psychoacoustics, the auditory response area & the auditory phenomena that associted with hearing).<br>The global object of this course able the students to know:<br>The basic physical concepts related to the sound.<br>Acoustics of sounds & its propagation.<br>Measurement of sound. | |

| 1 Theory + 1 Practical = 2 credits | Calibration of Audiology Equipments | AUD 224 |
|---|---|---|
| المتطلب السابق:<br><br>**Introduction to Hearing and Speech Sciences**<br><br>**HCS 111** | This course is designed to explore audiology student to principles of calibration of audiological equipments. And for them to achieve the basic concepts and skills necessary to work with equipments commonly engaged within the clinical sitting. Implement knowledge of basic electronics, bioelectrical hazards electrical circuits, attenuators and electrical safety.<br>Familiarize them with design and function of audiological equipments. Comprehend<br>environmental acoustics, acoustic rooms specifications and testing transducers.<br>Course abjectives include:<br><br>Understanding of and become familiar with equipment utilized in audiological measurements and calibration.<br>Achieve knowledge of the basic principles of electricity and electrical circuits.<br>Understand standards and methods of calibration for clinical and research equipment.<br>Gain knowledge of how to calibrate and troubleshoot audiological equipments<br>Understand basic principles of signal processing and analysis.<br>Sampled Data Systems and Signal Processing<br>Identify bioelectrical Hazards and implement safety standers | |

| 2 Theory + 1 Practical = 3 credits | Speech and Language development | AUD 225 |
|---|---|---|
| المتطلب المصاحب:<br><br>**Neurology of hearing and balance**<br><br>**AUD 221** | As a basic introduction to the development of speech and language. To introduce the student to the specific nature, sequence, and patterns of language development from birth through adolescence and its relation to other aspects of child development. To introduce the student to methods of studying and assessing speech and language development. Expose the student to the nature, causes and prevention of disorders of language speech. Implications. of hearing loss on speech, language development and communication<br><br>Objectives<br>Understand the sequence of development for the phonological, semantic, syntactic morphological and pragmatic systems.<br>Recognize integration of language components.<br>Realization of the psychoacoustic parameters and influences involved in speech perception.<br>The student will acquire the knowledge necessary to identify varying types and degrees of hearing loss and make decisions regarding their speech, language and educational implications<br><br>Understand how caregivers can positively affect the acquisition of communication, language, and speech<br>Expose the student to basic issues associated with assessment, diagnosis of typical speech and language skills for a variety of age ranges (e.g., formal language assessment tools normative curve, language sample analysis, formal speech assessment tools, speech sample analysis)<br>Apprehend basic classroom modification which assists in the acquisition and maintenance of communication competencies. | |

| 2 Theory + 1 Practical = 3 credits | Pathophysiology of Hearing and Balance Mechanism | AUD 311 |
|---|---|---|
| المتطلب السابق:<br><br>**Anatomy & Physiology of the Hearing & Balance Mechanisms**<br><br>**AUD 222** | This course is an introduction to basic physiology of hearing. Perception of different characteristics of auditory signal such as time, pitch and intensity will be discussed and analyzed. Moreover, the underlying pathophysiological changes to auditory disorders will be presented.<br>The main objective of this course is to enable the audiology student incorporate knowledge of pathophysiology of the auditory system to enhance ability to make correct diagnosis and Management of different auditory disorders.<br>Review the basic knowledge on normal anatomy and physiology of normal hearing.<br><br>Learn the perception of auditory signals including speech perception.<br>Understand changes in the auditory system related to hearing disorders. | |

| 2 Theory + 1 Practical = 3 credits | Hearing Impairment and Alternative communication | AUD 312 |
|---|---|---|
| المتطلب السابق:<br><br>**Anatomy & Physiology of the Hearing & Balance Mechanisms**<br><br>**AUD 222** | This course discusses normal and disordered development of auditory pathways, as a scientific foundation for modern assessment procedures in audiology. Pathologies affecting the conductive, mixed, sensory, neural and balance mechanisms and methods for their differential diagnosis. It also addresses the methodology of alternative communication to understand the development, anatomy, physiology and pathology of auditory pathway.<br><br>To analyze audiometric data for the purpose of diagnosis and management<br><br>To understand the nature , type and degree of hearing loss and its management.<br><br>To be able to identify candidates for Alternative Communication<br><br>To be able to match individual communicative needs to alternative communication suggested | |

| 2 Theory + 1 Practical = 3 credits | Aural Rehabilitation | AUD 313 |
|---|---|---|
| المتطلب السابق:<br><br>**Neurology of hearing and balance**<br><br>**AUD 221** | Aural rehabilitation refers to services and procedures for facilitating adequate receptive and expressive communication in individuals with hearing impairment. These services and procedures are intended for those persons who demonstrate a loss of hearing sensitivity or function in communicative situations as if they possess a loss of hearing sensitivity.<br>Explain the basic concepts of aural rehabilitation<br><br>Explain the advantages and disadvantages of hearing and balance management and intervention<br><br>Discuss different aural rehabilitation programs.<br>Explain the importance of Counseling and rehabilitation<br><br>Summarize the various communication options for those with hearing impairment.<br><br>Discuss oral communication and the critical factors that affect its success. | |

| 1 Theory + 2 clinical = 3 credits | Audiology 1 | AUD 314 |
|---|---|---|
| المتطلب السابق:<br><br>**Introduction to Hearing and Speech Sciences**<br>**HCS 111**<br><br>**Introduction to Psychology**<br>**HCS 112** | In this course the students will acquire the basic knowledge and perform basic audiometric tests of audiological assessment. The course will provide the students with an opportunity to learn about audiology practice, this practical-based module aims to develop skills in audiological assessment procedures.<br>Introduction to the field of Audiology & Audiological assessment.<br>Understand hearing Mechanism<br>Demonstrate the basic Audiological assessment.<br>Learn audiometric tests procedure & reading audiograms<br>Introduction to Tympanometry testing. | |

| 2 Theory + 1 clinical = 3 credits | Electrophysiologic Tests | AUD 315 |
|---|---|---|
| المتطلب السابق:<br><br>**Neurology of hearing and balance**<br><br>**AUD 221** | This course discusses advanced procedures for acquiring and interpreting auditory electrophysiologic tests. The student will have knowledge of the use of auditory brainstem evoked response testing for threshold and neuro-otologic diagnosis.<br>Review anatomy, physiology, and electrophysiology as related to auditory evoked potentials<br>Familiarize the students with procedures that may enhance their clinical practices<br>Develop a framework for approaching the diagnostic question in a clinically relevant and effective manner<br>Provide strategies for clinical decision-making and assessment of diagnostic outcomes.<br>Discuss fundamentals of averaging, filtering, amplifying, and sampling as related to auditory evoked potential<br>Discuss stimulus polarity<br>Describe subject variables in obtaining evoked potentials including normal variability<br>Normal latency and interpeak latencies<br>The major characteristics of ABRs, ECoGs, MLRs, and LLRs, ASSR, OAE<br>Diagnosis of peripheral and central auditory disorders | |

| 2 Theory + 1 practical = 3 credits | Noise Induced Hearing loss and Conservation of Hearing | AUD 321 |
|---|---|---|
| المتطلب السابق:<br><br>**Neurology of hearing and balance**<br><br>**AUD 221** | In this course the students will learn how noise affects hearing and what are the pathophysiological changes that accompany that. In addition, the students will learn how to diagnose NIHL, how to prevent NIHL and how to manage NIHL.<br><br>Learn how noise affects hearing through learning different theories in NIHL<br>What are the pathophysiological changes<br>Learn the diagnostic hallmarks of NIHL.<br>Management and prevention of NIHL. | |

| 2 Theory + 1 practical = 3 credits | Vestibular Assessment and Management | AUD 322 |
|---|---|---|
| المتطلب السابق:<br><br>لا يوجد | This course provides the vestibular assessments, interpretation of clinical tests and measurements.<br>How to best apply these results to patient care through an evidenced based approach.<br><br>**Objectives**<br>The goal of this course is to make an immediate impact on the participant's the practice of vestibular evaluation.<br>Analyze and critique the scientific basis of and the indications for a variety of vestibular assessment and Tests /techniques used in diagnostic screening of patients typically referred for Vestibular assessment<br>Collaborate with other health care providers as needed to use the results of such assessment in patient's diagnosis and management.<br>Additionally, the goal will be to further develop the Audiology practitioner's ability to make use of evidence based practice in making clinical decisions and enhance their ability in localizing the site of pathology to use the results of such assessment in patient's differential diagnosis and management. | |

| 3 Theory + 2 practical = 4 credits | Human Anatomy and physiology | HRS 111 |
|---|---|---|
| المتطلب السابق:<br><br>**Human Biology**<br><br>**HFSB 101–1**<br><br>**Biology for Health programs**<br><br>**HFSB 102–1** | This course deals with the structure and function of the human body and mechanisms for maintaining homeostasis within it. It includes the study of cells, tissues, the integumentary, skeletal, muscular and nervous systems. The endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems, as well as the concepts of development, metabolism, fluid and electrolyte balance, and acid-base balance are included. Identification of anatomical structures on a Human Anatomy Torso model will be required in the laboratory. Moreover students are required to perform some laboratory tests related to certain organ systems. | |

| 2 Theory + 1 practical = 3 credits | Emergency life support techniques | HRS 114 |
|---|---|---|
| المتطلب السابق:<br><br>**Human Biology**<br><br>**HFSB 101–1**<br><br>**Biology for Health programs**<br><br>**HFSB 102–1** | The course is a 3 unit course of lectures and laboratory which develops the students knowledge on the basic concepts first aid and cardiorispiratory resuscitation.<br>The student will also be learning how to assess emergency situations such as bleeding, fractures , wounds and shock.<br>The student will also be learning how to prevent disease transmition, and isolation concepts.<br>To realize the general concepts and the basis of first aid and perform CPR effectively<br>To deal with and manage common first aid emergencies. To deal with and manage common first aid emergencies.<br>To assess the emergency situation and categorize the patients according to the periorities and degree of illness<br><br>To communicate with the operator , colleagues and patients relatives effectively based on professional ethics and control protocols | |

| 2 Theory + 1 practical = 3 credits | **Biostatistics** | **HRS 116** |
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| المتطلب السابق:<br><br>**Human Biology**<br><br>**HFSB 101–1** | After the introductory course "Introduction to biostatistics".The goal of this course is to learn advanced techniques in data analysis for quantitative and cathegorical variables. In this course, students will perform inference about means, correlation, regression and inference about proportion, using hand calculations and computational support (SPSS)<br>Multiple linear regression<br>Students will learn inference about mean<br>Inference about a proportion<br>Comparing independent means<br>Comparing two proportions<br>Comparing several means –ANOVA-<br>Cross tabulated counts<br>Correlation<br>Stratified 2 by 2 tables<br>Regression Multiple linear regression | |