

Revised Syllabus
For
D.A.T.
Diploma in Audiometry
Technician



**LAL BAHADUR SHASTRI HEALTH SCIENCES
AND TECHNICAL COUNCIL, INDIA**

लाल बहादुर शास्त्री आरोग्य विज्ञान एवं प्राविधिक परिषद, भारत

मुख्य कार्यालय : 4वीं मंजिल, प्राइम प्लाजा, इंदरा नगर, लखनऊ

प्रशासनिक कार्यालय : द्वितीय तल, सुनील कम्पलेक्स, वेस्टर्न कचेरी रोड, मेरठ

वेबसाइट – www.lbspstc.in संपर्क सूत्र –121-4349311

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(To be implemented from 2026-27 session)

Syllabus Of “D.A.T. ” Diploma in Audiometry Technician

First Year (1st Year)

S.NO	Subject	Distribution Of Mark			
		TH	PR	Viva -Voce	Total
DAT-101	Audiology	100	-	-	100
DAT -102	Speech And Language Pathology	100	-	-	100
DAT -103	Basic Medical Sciences Related To Speech & Hearing	100	-	-	100
DAT -104	Oral & Practical	100	-	-	100
DAT -105	Hospital Industrial Training	-	100	-	100
	Total	-	-	-	500

Second Year (2nd Year)

S.NO	Subject	Distribution Of Mark			
		TH	PR	Viva -Voce	Total
DAT -201	Psychology	100	-	-	100
DAT -202	Education For Children With Special Needs	100	-	-	100
DAT -203	Community Based Rehabilitation	100	-	-	100
DAT -204	Oral & Practical	100	-	-	100
DAT -205	Hospital Industrial Training	-	100	-	100
	Total	-	-	-	500

First Year (1st Year)

➤ DAT-101 – AUDIOLOGY

Unit 1 – Fundamentals of Sound & Acoustics: Physical properties of sound (Frequency, Intensity, Phase, Wavelength, Velocity, Complex waves, Harmonics, Decibel scale - dB SPL, dB HL, dB SL), acoustic resonance, sound transmission in various media.

Unit 2 – Introduction to Audiology & Hearing Science: Scope of audiology, auditory pathway physiology, mechanics of hearing (Air conduction and Bone conduction pathways), normal hearing thresholds, and auditory perception.

Unit 3 – Diagnostic Instrumentation in Audiology: Pure Tone Audiometer construction, standards (ANSI / ISO / BIS), transducers (Supra-aural earphones TDH-39/49, Insert earphones ER-3A/5A, Bone vibrator B-71), Sound level meters, Artificial ear/mastoid calibration protocols.

Unit 4 – Pure Tone Audiometry (Air & Bone Conduction): Preparation of patient, instructions, threshold determination methods (Hughson-Westlake 5 dB up - 10 dB down modified procedure), testing octaves (125 Hz to 8000 Hz), plotting audiogram symbols (ANSI/ASHA standards).

Unit 5 – Clinical Masking Principles & Techniques: Concept of cross-hearing, interaural attenuation (IA values for TDH-39, inserts, and bone conductor), shadow curves; Narrow-Band Noise (NBN), Plateau method (Hood's technique), overmasking, undermasking, and masking dilemma.

Unit 6 – Classification & Types of Hearing Impairment: Etiology, audiometric configuration, and features of Conductive Hearing Loss (CHL), Sensorineural Hearing Loss (SNHL), Mixed Hearing Loss (MHL), Central Auditory Processing Disorder (CAPD), Functional / Non-organic hearing loss; WHO classification of hearing disability.

Unit 7 – Tuning Fork Tests & Otoscopic Examination: Technique, interpretation, and clinical significance of Rinne test, Weber test, Schwabach test, Absolute Bone Conduction (ABC), Bing test, and Gelle's test; Otoscopic examination protocol (landmarks of Tympanic Membrane - Cone of light, Umbo, Malleus handle).

Unit 8 – Speech Audiometry: Speech Reception Threshold (SRT), Speech Detection Threshold (SDT / SAT), Word Recognition Score (WRS / SDS), Most Comfortable Loudness (MCL), Uncomfortable Loudness Level (UCL), Dynamic Range; Speech stimulus materials (Spondee words, PB words in English and regional languages).

Unit 9 – Immittance Audiometry / Tympanometry Basics: Acoustic immittance principles (Admittance, Impedance, Compliance); Static acoustic compliance, Tympanometric peak pressure (TPP), Ear canal volume (ECV); Jerger classification of tympanograms (Type A, As, Ad, B, C); Acoustic Stapedial Reflex testing (Ipsilateral and Contralateral pathways).

Unit 10 – Hearing Screening in Neonates & School Children: High-risk registry for infant hearing loss, Universal Newborn Hearing Screening (UNHS) protocols; Objective screening

tools: Transient Evoked Otoacoustic Emissions (TEOAE) and Automated Auditory Brainstem Response (AABR); School hearing screening programmes.

➤ **DAT-102 – SPEECH AND LANGUAGE PATHOLOGY**

Unit 1 – Fundamentals of Speech & Language: Definitions, difference between speech, language, and communication; Five components of language (Phonology, Morphology, Syntax, Semantics, Pragmatics); Biological and social foundations of communication.

Unit 2 – Normal Speech and Language Development: Milestones of normal speech and language acquisition in children (Cooing, Babbling, First words, Holophrastic stage, Telegraphic speech, Complex sentences); Receptive vs Expressive language milestones (Birth to 6 years).

Unit 3 – Speech Production Mechanism: Four subsystems of speech production: Respiratory system (Power source, Breath support for speech), Phonatory system (Laryngeal mechanics, Vocal fold vibration, Myoelastic-Aerodynamic theory), Resonatory system (Velopharyngeal mechanism, Oral and Nasal cavities), Articulatory system (Active and Passive articulators).

Unit 4 – Articulation and Phonological Disorders: Classification of articulation errors (SODA: Substitution, Omission, Distortion, Addition); Causes (Structural anomalies, Functional, Hearing impairment); Screening tests for articulation in children.

Unit 5 – Voice Disorders (Dysphonia): Parameters of normal voice (Pitch, Loudness, Quality, Flexibility); Etiology and clinical features of Functional voice disorders (Vocal nodules, Polyps, Contact ulcers, Puberphonia) and Organic/Neurological voice disorders (Vocal cord paralysis, Spasmodic dysphonia); Basic vocal hygiene principles.

Unit 6 – Fluency Disorders (Stuttering / Stammering & Cluttering): Characteristics of normal non-fluency vs stuttering; Primary behaviors (Repetitions, Prolongations, Blocks) and Secondary behaviors (Facial grimaces, Eye blinks, Avoidance); Etiological theories and basic fluency management guidelines.

Unit 7 – Language Disorders in Children: Developmental Language Disorder (DLD), Language delay secondary to Hearing Impairment, Intellectual Disability, Autism Spectrum Disorder (ASD), Cerebral Palsy, and Attention Deficit Hyperactivity Disorder (ADHD); Screening and clinical identification.

Unit 8 – Adult Neurogenic Language & Speech Disorders: Aphasia (Broca's, Wernicke's, Global, Anomic aphasia - causes, stroke correlation); Motor speech disorders: Dysarthria (Spastic, Flaccid, Ataxic) and Apraxia of Speech; Basic screening protocols.

Unit 9 – Cleft Lip & Palate and Resonance Disorders: Types of Cleft lip and palate, Velopharyngeal Inadequacy (VPI), Hypernasality, Hyponasality, Nasal air emission, Compensatory articulation patterns, multidisciplinary team approach.

Unit 10 – Role of Audiometry Technician in Speech-Language Evaluation: Recording comprehensive speech case histories, administering informal screening checklists, perceptual voice rating, and collaborative referral to Speech-Language Pathologists.

➤ **DAT-103 – BASIC MEDICAL SCIENCES RELATED TO SPEECH & HEARING**

Unit 1 – Anatomy & Physiology of the External Ear: Pinna (Auricle) structure, landmarks (Helix, Antihelix, Tragus, Concha, Lobule); External Auditory Canal (Cartilaginous and Bony parts, Ceruminous glands, S-shaped curve); Tympanic Membrane histology (Pars tensa, Pars flaccida, Annulus, Umbo).

Unit 2 – Anatomy & Physiology of the Middle Ear: Middle ear cavity (Tympanic cavity boundaries); Ossicular chain (Malleus, Incus, Stapes); Middle ear muscles (Tensor tympani, Stapedius) and acoustic reflex; Eustachian tube anatomy and physiological functions; Impedance matching mechanism of middle ear (Areal ratio, Lever ratio, Catenary lever).

Unit 3 – Anatomy & Physiology of the Inner Ear (Cochlea & Vestibular System): Bony and Membranous Labyrinth; Structure of Cochlea (Scala vestibuli, Scala media, Scala tympani, Helicotrema, Perilymph and Endolymph chemistry); Organ of Corti, Inner Hair Cells (IHC), Outer Hair Cells (OHC), Tectorial membrane, Basilar membrane travelling wave mechanics (Von Békésy theory), Transduction of auditory signals; Vestibular apparatus (Semicircular canals, Utricle, Saccule).

Unit 4 – Central Auditory Pathways & Neuroanatomy: Auditory nerve (Cranial Nerve VIII), Cochlear Nucleus, Superior Olivary Complex (binaural hearing and localization), Lateral Lemniscus, Inferior Colliculus, Medial Geniculate Body (Thalamus), Primary Auditory Cortex (Heschl's gyrus / Brodmann area 41 & 42), Wernicke's area, Broca's area, and Arcuate fasciculus.

Unit 5 – Anatomy & Physiology of the Larynx & Vocal Tract: Laryngeal framework: Thyroid, Cricoid, Epiglottis, Arytenoid, Corniculate, and Cuneiform cartilages; Intrinsic and Extrinsic laryngeal muscles; Recurrent and Superior laryngeal nerves (Cranial Nerve X - Vagus); True vocal cords, False vocal cords, Glottis; Phonatory cycle.

Unit 6 – Anatomy & Physiology of Articulatory & Resonatory Structures: Maxilla, Mandible, Hard palate, Soft palate (Velum), Tongue (Intrinsic and Extrinsic lingual muscles, Cranial Nerve XII), Lips, Teeth (Occlusion types), Pharyngeal constrictors, and Velopharyngeal sphincter mechanics.

Unit 7 – Common Pathologies of the Ear & Hearing Loss: External ear disorders (Otitis externa, Cerumen impaction, Microtia, Atresia); Middle ear disorders (Acute Otitis Media, Otitis Media with Effusion / Glue ear, Chronic Suppurative Otitis Media - CSOM mucosal and squamous types, Cholesteatoma, Otosclerosis, Tympanic membrane perforation); Inner ear disorders (Presbycusis, Noise-Induced Hearing Loss / NIHL, Meniere's disease, Ototoxicity, Acoustic Neuroma / Vestibular Schwannoma).

Unit 8 – Cranial Nerves Related to Speech, Hearing & Swallowing: Detailed functional study of Cranial Nerves: CN V (Trigeminal), CN VII (Facial), CN VIII (Vestibulocochlear),

CN IX (Glossopharyngeal), CN X (Vagus), CN XI (Accessory), and CN XII (Hypoglossal); Clinical signs of nerve paralysis.

Unit 9 – Fundamentals of General Pathology & Pharmacology in ENT: Inflammation, infection, tissue edema; Common ototoxic drugs (Aminoglycoside antibiotics like Gentamicin, Amikacin; Loop diuretics like Furosemide; Chemotherapy agents like Cisplatin; Salicylates; Antimalarials); Antihistamines, decongestants, and ear drops.

Unit 10 – Genetics & Syndromes Associated with Hearing Impairment: Non-syndromic genetic hearing loss (GJB2 / Connexin 26 mutations); Syndromic hearing loss: Waardenburg, Usher, Pendred, Alport, Treacher Collins, and Down syndrome; Prenatal infections (TORCH panel - Toxoplasmosis, Rubella, CMV, Herpes).

➤ **DAT-104 – ORAL & PRACTICAL**

Unit 1 – Audiology Clinic Setup & Acoustic Environment: Sound-treated audiometric booth design (Single room vs Double room, Ambient noise permissible limits as per ANSI S3.1 standards), daily inspection of cables, headphones, bone vibrator, patient response switch.

Unit 2 – Otoscopic Examination Hands-On: Handling handheld otoscope, selecting speculum size, ear canal straightening technique (pulling pinna upward and backward in adults, downward and backward in young children), identifying normal landmarks and abnormalities (wax, discharge, perforation).

Unit 3 – Tuning Fork Tests Execution: Practical performance of Rinne, Weber, and Schwabach tests using 256 Hz, 512 Hz, and 1024 Hz tuning forks, documenting results and clinical correlation.

Unit 4 – Pure Tone Air Conduction Audiometry Practice: Patient seating, instruction delivery in regional language, earphone placement, testing threshold frequencies (250 Hz to 8000 Hz), calculating Pure Tone Average (PTA at 500, 1000, 2000 Hz).

Unit 5 – Pure Tone Bone Conduction Audiometry & Masking: Placement of B-71 bone vibrator on mastoid prominence, determining unmasked thresholds, applying clinical masking using plateau method on clinical audiometer, plotting masked symbols.

Unit 6 – Speech Audiometry Practical: Administering Speech Reception Threshold (SRT) using spondee word lists, Speech Discrimination Score (SDS / WRS) using phonetically balanced words, calculating speech-audiometry agreement with PTA.

Unit 7 – Immittance Audiometry / Tympanometry Hands-On: Probe tip selection, obtaining hermetic seal in external canal, recording 226 Hz probe tone tympanogram, measuring ear canal volume, peak pressure, compliance, and recording ipsi/contra acoustic reflexes.

Unit 8 – Otoacoustic Emission (OAE) Screening Practical: Setting up portable OAE screening device, probe calibration, recording TEOAE and DPOAE (Pass / Refer criteria) in infants and young children.

Unit 9 – Speech Screening & Perceptual Voice Assessment: Administering basic articulation screening cards, documenting speech clarity errors (SODA), recording maximum phonation time (MPT) and s/z ratio.

Unit 10 – Case Documentation, Audiogram Plotting & Viva-Voce: Plotting complete audiometric evaluation sheets, calculating percentage of hearing impairment as per Government of India Gazette disability guidelines, and oral viva-voce examination.

➤ **DAT-105 – HOSPITAL INDUSTRIAL TRAINING**

Unit 1 – ENT & Audiology OPD Clinical Orientation: Introduction to hospital workflow, patient registration, handling OPD queues, professional ethics, patient communication, and documentation in hospital information systems.

Unit 2 – Clinical Audiometric Testing Under Supervision: Performing routine pure tone audiometry on at least 50 clinical cases (adults and children) presenting with hearing loss, tinnitus, vertigo, and ear discharge.

Unit 3 – Industrial Audiometry & Noise Measurement: Concepts of industrial noise exposure, Occupational Safety and Health Administration (OSHA) / Factories Act noise standards (Permissible Exposure Limit / PEL 90 dBA for 8 hours); operating Sound Level Meters and Dosimeters; conducting baseline and periodic audiometric screening for factory workers.

Unit 4 – Hearing Conservation Programmes (HCP): Components of industrial HCP: Noise monitoring, Engineering and Administrative controls, Personal Hearing Protection Devices (HPDs - Foam earplugs, Custom molded earplugs, Earmuffs, Noise Reduction Rating / NRR calculation), Worker education.

Unit 5 – Hearing Aid Center Orientation & Types of Hearing Aids: Classification of hearing aids (Body worn / Pocket model, Behind-The-Ear / BTE, Receiver-In-Canal / RIC, In-The-Ear / ITE, In-The-Canal / ITC, Completely-In-Canal / CIC, Invisible-In-Canal / IIC, Bone Conduction Hearing Aids / BCHA, CROS / BiCROS).

Unit 6 – Hearing Aid Hardware, Controls & Accessories: Microphones (Omnidirectional vs Directional), Amplifier, Receiver / Loudspeaker, Digital Signal Processor (DSP), Telecoil, Volume control, Trimmers, Battery types (Zinc-air sizes: 10, 312, 13, 675; color coding, battery testers).

Unit 7 – Ear Impression Making Hands-On: Inspection of canal, otoblock placement, mixing silicone impression material (base and catalyst), syringe loading, injecting into ear canal, checking impression completeness (helix, canal length, tragus, concha), post-impression otoscopy.

Unit 8 – Hearing Aid Troubleshooting & Maintenance: Diagnosing common hearing aid faults (Dead aid, Weak sound, Distorted sound, Acoustic feedback whistling, Intermittent sound, Battery drain); cleaning wax guards, tubing replacement, dehydrator use.

Unit 9 – Audiometric Equipment Calibration & Maintenance: Daily biological listening checks, checking headphone cords and jacks for intermittent static, monthly sound level meter acoustic check, annual laboratory calibration protocols.

Unit 10 – Hospital Training Logbook & Performance Assessment: Maintenance of verified clinical logbook with minimum 50 audiometry cases, 10 hearing aid trial records, 5 ear impressions, and hospital preceptor evaluation.

Second Year (2nd Year)

➤ DAT-201 – PSYCHOLOGY

Unit 1 – Introduction to General Psychology: Definition, scope, branches of psychology; Biological bases of behavior; Methods of psychological inquiry (Observation, Case study, Experimental method, Interview).

Unit 2 – Developmental Psychology (Life-Span Development): Stages of human development: Prenatal stage, Infancy, Early childhood, Late childhood, Adolescence, Adulthood, and Old age; Physical, cognitive, emotional, and social development milestones (Piaget's stages of cognitive development, Erikson's psychosocial stages).

Unit 3 – Psychological Impact of Hearing & Speech Disability: Psychological consequences of congenital vs acquired hearing loss; Impact on language acquisition, cognitive growth, emotional stability, self-esteem, social isolation, and academic performance; Psychological aspects of deaf culture vs oralism.

Unit 4 – Psychology of Learning, Memory & Motivation: Principles of Classical Conditioning (Pavlov), Operant Conditioning (Skinner), and Observational / Social Learning (Bandura); Sensory memory, Short-Term Memory (Working memory), Long-Term Memory; Motivation (Intrinsic vs Extrinsic), Frustration, and Conflict.

Unit 5 – Sensation, Perception & Attention: Sensory processes; Auditory and Visual perception; Perceptual organization (Gestalt principles); Selective attention, Sustained attention; Factors influencing perception in sensory-impaired children.

Unit 6 – Personality Development & Assessment: Definition, theories of personality (Trait theories, Psychodynamic theory); Personality assessment techniques (Inventories, Projective tests); Adjustment mechanisms, Defense mechanisms (Denial, Projection, Compensation, Rationalization).

Unit 7 – Intelligence & Cognitive Assessment: Concept of Intelligence (IQ), theories of intelligence (Gardner's Multiple Intelligences, Spearman's g-factor); Verbal vs Non-verbal intelligence tests used for hearing-impaired individuals (Bhatia's Battery, Raven's Progressive Matrices, Malin's WISC, Vineland Social Maturity Scale / VSMS).

Unit 8 – Psychological Reactions of Parents & Families: Parental reaction to diagnosis of disability in a child (Stages of grief: Denial, Anger, Bargaining, Depression, Acceptance); Family dynamics, stress, sibling reactions, and family empowerment.

Unit 9 – Counseling Principles for Hearing & Speech Impaired: Definition, objectives, and qualities of an effective counselor; Directive vs Non-directive counseling; Informational counseling vs Personal adjustment counseling; Counseling parents of newly diagnosed deaf infants; Counseling adult hearing aid users with presbycusis and tinnitus.

Unit 10 – Behavior Modification & Management Techniques: Principles of Applied Behavior Analysis (ABA); Positive and negative reinforcement, Token economy, Extinction, Shaping, Chaining, Time-out; Managing behavioral challenges in children with special needs.

➤ **DAT-202 – EDUCATION FOR CHILDREN WITH SPECIAL NEEDS**

Unit 1 – Concept & History of Special Education: Meaning, scope, and evolution of Special Education; Shifts in educational philosophy: Segregation (Special schools) to Integration (Integrated schools) to Inclusion (Inclusive education); Rights of Persons with Disabilities (RPwD) Act 2016 educational mandates; National Education Policy (NEP 2020) provisions for inclusive learning.

Unit 2 – Educational Classification of Hearing Impairment: Educational implications of Mild, Moderate, Severe, and Profound hearing loss; Pre-lingual vs Post-lingual deafness; Age of onset, age of identification, and early intervention impact on literacy and academic achievement.

Unit 3 – Communication Approaches for the Hearing Impaired: Auditory-Verbal Therapy (AVT - principles and techniques), Oral-Aural approach, Manual communication (Indian Sign Language / ISL, American Sign Language / ASL, Finger spelling), Total Communication (TC), Cued Speech, and Bilingual-Bicultural approach (Bi-Bi).

Unit 4 – Educational Assessment & Individualized Education Plan (IEP): Educational assessment tools for children with hearing impairment; Components and development of an Individualized Education Plan (IEP): Baseline assessment, Annual goals, Short-term instructional objectives, Specialized teaching strategies, Progress monitoring.

Unit 5 – Classroom Acoustics & Assistive Listening Devices (ALD): Acoustic challenges in regular classrooms (Ambient noise, Reverberation time / RT, Signal-to-Noise Ratio / SNR); Classroom modifications (Acoustic ceiling tiles, carpets, curtains); Assistive technology: Personal FM systems, Soundfield FM systems, Digital wireless systems, Induction loop systems, and Bluetooth streaming accessories.

Unit 6 – Early Identification & Early Intervention Programmes (EIP): Significance of the critical language learning period (0 to 3 years); Parent-Infant Programmes (PIP), home-based training, auditory training stages (Detection / Awareness, Discrimination, Identification, Comprehension - Erber's approach).

Unit 7 – Curriculum Adaptation & Teaching Methodologies: Modifying general school curriculum for deaf students; Visual aids, Graphic organizers, Multisensory teaching techniques, Language experience approach (LEA), Direct instruction; Teaching reading, writing, and mathematics to children with hearing impairment.

Unit 8 – Education for Children with Associated Multiple Disabilities: Educational management of Deaf-Blindness, Hearing loss associated with Cerebral Palsy, Intellectual Disability, Autism Spectrum Disorder (ASD), and Attention Deficit Hyperactivity Disorder (ADHD); Augmentative and Alternative Communication (AAC - PECS, Communication boards, Speech generating devices).

Unit 9 – Role of Parents, Special Educators & Multidisciplinary Team: Collaboration between Audiometry Technicians, Speech-Language Pathologists, Special Educators, Regular Teachers, Psychologists, ENT Specialists, and Parents; Parent support groups and home training activities.

Unit 10 – Government Schemes, Facilities & Exam Concessions: Government concessions for students with hearing impairment (Extra time, scribe facility, exemption from second/third language in board exams); Samagra Shiksha Abhiyan, ADIP scheme (Assistance to Disabled Persons for Purchase/Fitting of Aids/Appliances), Scholarships, and Universal ID for Persons with Disabilities (UDID).

➤ **DAT-203 – COMMUNITY BASED REHABILITATION**

Unit 1 – Concept & Principles of Rehabilitation: Definition of Impairment, Disability, and Handicap (WHO International Classification of Functioning, Disability and Health - ICF model); Types of rehabilitation: Medical, Educational, Vocational, and Social rehabilitation; Institutional vs Community-Based Rehabilitation (CBR).

Unit 2 – WHO CBR Matrix & Guidelines: Structure of WHO CBR Matrix (5 major components: Health, Education, Livelihood, Social, and Empowerment); Role of community participation, local resource mobilization, and sustainability in rural and urban CBR projects.

Unit 3 – Epidemiology & Prevention of Hearing Loss in Community: Prevalence and incidence of hearing and speech disorders in India; Levels of prevention: Primordial (improving socio-economic hygiene), Primary (Universal Immunization - Rubella/Measles, avoidance of consanguineous marriages, maternal nutrition, noise control), Secondary (Early screening, timely medical/surgical intervention), Tertiary (Hearing aid fitting, auditory training, rehabilitation).

Unit 4 – National Health & Disability Programmes in India: National Programme for Prevention and Control of Deafness (NPPCD) - objectives, strategies, screening camps, and service delivery at Sub-Centre, PHC, CHC, and District hospital levels; National Health Mission (NHM), Rashtriya Bal Swasthya Karyakram (RBSK) for 4Ds (Defects at birth, Diseases, Deficiencies, Developmental delays).

Unit 5 – Legislation, Acts & Rights of Persons with Disabilities: The Rights of Persons with Disabilities (RPwD) Act 2016 (21 recognized disabilities, 4% reservation in government jobs, inclusive education rights, non-discrimination); Rehabilitation Council of India (RCI) Act 1992; National Trust Act 1999; Mental Healthcare Act 2017.

Unit 6 – Disability Certification & Welfare Schemes: Guidelines for evaluation and certification of hearing and speech impairment (Percentage of disability calculation based on

PTA, DB criteria); Issuance of UDID card; ADIP scheme (Free distribution of digital hearing aids and Cochlear Implant support up to 6 Lakhs for eligible children); Railway and Bus travel concessions; Income tax benefits (Section 80U/80DD); Disability pensions.

Unit 7 – Organizing Community Screening Camps: Planning, logistics, and execution of rural and school hearing screening camps; Team coordination with local ASHA, ANM, Anganwadi workers, and Panchayati Raj institutions; Conducting mobile audiometry and triage.

Unit 8 – Vocational Rehabilitation & Employment: Vocational assessment, job training, skill development initiatives (National Skill Development Corporation / NSDC), workplace accommodations, ergonomic acoustic modifications, self-employment schemes, and barrier-free communication at workplaces.

Unit 9 – Information, Education & Communication (IEC) & Advocacy: Designing IEC materials (Pamphlets, posters, video clips, street plays/Nukkad Natak) for hearing health awareness, eliminating stigma around hearing aids and deafness, World Hearing Day themes, advocating for sign language accessibility.

Unit 10 – Role of Non-Governmental Organizations (NGOs) & Self-Help Groups: Role of NGOs, international agencies (WHO, UNICEF, CBM), National Institutes (AYJNISHD, AIISH), Self-Help Groups (SHGs), and disabled persons' organizations (DPOs) in empowerment and rights-based advocacy.

➤ **DAT-204 – ORAL & PRACTICAL**

Unit 1 – Advanced Pure Tone Audiometry & Masking Demonstration: Performing complex masking in cases of asymmetrical SNHL, bilateral conductive hearing loss, and mixed hearing loss with wide air-bone gaps; plotting masked symbols accurately on clinical audiograms.

Unit 2 – High-Frequency & Special Audiometric Tests: Performing Extended High Frequency (EHF) audiometry (9000 Hz to 16000 Hz) for ototoxicity and noise exposure monitoring; Tone Decay Test (TDT) and Short Increment Sensitivity Index (SISI) for differentiating cochlear vs retrocochlear lesions.

Unit 3 – Pediatric Behavioral Audiometry: Practical execution of Behavioral Observation Audiometry (BOA) in infants (0-6 months), Visual Reinforcement Audiometry (VRA) using animated light boxes (6-24 months), and Conditioned Play Audiometry (CPA) using pegs/blocks (2-5 years).

Unit 4 – Advanced Immittance & Reflex Decay Testing: Performing multi-frequency tympanometry, Eustachian tube function (ETF) test for intact and perforated tympanic membranes, Acoustic Reflex Decay test (testing for retrocochlear fatigue).

Unit 5 – Digital Hearing Aid Programming & Fitting: Connecting BTE / RIC digital hearing aids to fitting software via Hi-Pro / Noahlink Wireless; entering patient audiogram, running prescription fitting formulas (NAL-NL2, DSL v5), adjusting gain, compression ratios (WDRC), noise reduction channels, and feedback cancellation.

Unit 6 – Real Ear Measurement (REM) & Verification: Setting up probe microphone measurement system, inserting probe tube in canal, measuring Real Ear Unaided Response (REUR), Real Ear Aided Response (REAR), and Real Ear Insertion Gain (REIG) for objective fitting verification.

Unit 7 – Ear Mold Modification & Laboratory Techniques: Modifying hard acrylic and soft silicone ear molds using lab grinding tools, making vents (parallel vs diagonal vents) to reduce occlusion effect, replacing tubing, attaching dampers/filters.

Unit 8 – Assistive Listening Devices (ALD) Setup & Demonstration: Connecting and demonstrating Personal FM systems, Soundfield classroom systems, induction neck-loops, TV listening devices, and vibrating/visual alerting alarms.

Unit 9 – Disability Assessment & Report Compilation: Calculating percentage of hearing disability from audiograms according to standard Government of India Ministry of Social Justice guidelines; drafting standardized clinical diagnostic and referral reports.

Unit 10 – Practical Clinical Case Defense & Grand Viva-Voce: Presentation and defense of 10 comprehensive clinical case files (pediatric, adult, geriatric, and occupational cases) followed by grand oral viva-voce examination.

➤ **DAT-205 – HOSPITAL INDUSTRIAL TRAINING**

Unit 1 – Advanced Hospital Audiology Unit Internship: Full-time supervised internship in hospital audiology department, participating in multi-specialty clinical rounds with ENT surgeons, pediatricians, and neurologists.

Unit 2 – Clinical Audiometry & Diagnostic Battery Practice: Conducting full diagnostic test batteries (PTA, Speech Audiometry, Tympanometry, Reflexes, OAE) on a minimum of 100 clinical cases presenting to the hospital.

Unit 3 – Pediatric Hearing Evaluation Clinical Experience: Hands-on participation in neonatal hearing screening in NICU/postnatal wards (OAE / AABR) and behavioral assessment of young children in pediatric audiology rooms.

Unit 4 – Hearing Aid Selection, Trial & Dispensing Internship: Conducting comprehensive hearing aid trials on minimum 25 clinical patients (assessing functional gain, speech understanding in noise, patient subjective satisfaction).

Unit 5 – Ear Mold Impression & Delivery Clinical Practice: Taking silicone ear impressions for children and adults under supervision, checking finished ear mold fit in patient ear, and counseling on insertion/removal and cleaning.

Unit 6 – Cochlear Implant (CI) Rehabilitation Clinic Observation: Observation of Cochlear Implant candidacy evaluation, overview of speech processor mapping (audiologist assisting), and monitoring habilitation progress in children with CI.

Unit 7 – Industrial Audiometry & Hearing Conservation Field Work: Conducting onsite audiometric testing for industrial factory workers in high-noise environments, compiling occupational noise exposure reports, and fitting hearing protection.

Unit 8 – Participation in Community Hearing Screening Camps: Active field participation in minimum 3 community/school hearing screening camps organized by the institution, NPPCD, or partner NGOs.

Unit 9 – Tinnitus & Vestibular Clinic Assisting: Assisting in tinnitus evaluation (pitch and loudness matching), tinnitus sound therapy counseling, and observing basic vestibular screening (Dix-Hallpike test, VNG basics).

Unit 10 – Final Internship Logbook Verification, Case Defense & Viva: Submission and formal verification of completed hospital internship record signed by supervising Audiologist / ENT specialist, defense of clinical portfolio, and final practical examination.

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