REGULATIONS 2016

SYLLABUS

for Courses affiliated to the

Kerala University of Health Sciences

Thrissur 680596

BACHELOR OF

Audiology, Speech and Language Pathology

Course Code: 014

(2016-17 Academic year onwards)

2016

2. COURSE CONTENT

2.1 Title of course:

It shall be – BACHELOR OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY – Abbreviated as BASLP

2.2 Objectives of course

A. Goals of the course

BASLP curriculum is oriented towards training students to undertake the responsibilities of an Audiologist and Speech- Language Pathologist.

- This course enables the students to acquire professional knowledge in prevention, identification, assessment, habilitation and rehabilitation of speech, language, hearing, balancing and swallowing aspects.
- Adequate emphasis is to be placed on cultivating logical and scientific habits of thoughts, clarity of expression, independence of judgment and ability to collect and analyse information and to correlate them.
- The educational process should be placed in historical background as an evolving process and not merely as an acquisition of large number of disjointed facts without a proper perspective. The history of the field with reference to its evolution both in this country and rest of the world should form a part of this process
- Lectures alone are generally not adequate as a method of training and are a poor means of transferring / acquiring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstrations and on first-hand experience. Students will be encouraged to learn in small groups through peer interactions, so as to gain maximal experience through contacts with patients and the communities in which they live. While the curriculum objectives often refer to areas of knowledge or science, they are best taught in a setting of clinical relevance and hands on experience for students who assimilate and make this knowledge a part of their own

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working skills.

- Clinics should be organized in small groups so that a teacher can give personal attention to each student with a view to improve his/her skill and competence in handling the patient.
- Proper records of the work should be maintained which will form the basis of the student's internal assessment for practicals and should be available for the inspectors at the time of inspection of the college.

2.3 Medium of instruction

Medium of instruction shall be English

2.4 Course outline

The regulation of the Bachelor of Audiology & Speech Language Pathology (BASLP) being conducted by the Kerala University of Health Sciences is in accordance with the recommendations of the rehabilitation council of India with an emphasis on the health needs of the Kerala State.

Number of exams

There shall be two University examinations in each academic year including regular and supplementary examinations for theory and clinical practicum.

2.5 Duration

Duration of the course shall be of 3 academic years plus 1 academic year (10 months) of internship.

2.6 Syllabus

- First Year BASLP: Introduction to speech language pathology and speech diagnostics and therapeutics, Introduction to audiology and audiological evaluation, Anatomy, physiology and pathology of speech and hearing systems, biomedical instrumentation and acoustics, Linguistics phonetics and language sciences, Psychology related to speech and hearing, genetics, neurology and paediatrics, Clinical practicum Speech language pathology, Clinical practicum Audiology.

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- Second Year BASLP: Normal and abnormal aspects of articulation, Fluency and its disorders, Normal and abnormal aspects of voice, Diagnostics audiology, Educational audiology and rehabilitative audiology, Otolaryngology, Statistics and research methods & epidemiology related to speech and hearing, Clinical practicum Speech language pathology, Clinical practicum Audiology.
- Third Year BASLP: Motor speech disorders and dysphagia, Child language disorders, Aphasia and other language disorders, Hearing aids, Paediatric audiology, Environmental audiology, Scientific enquiry in speech and hearing and organization and administration of speech and hearing centers, Clinical practicum Speech language pathology, Clinical practicum Audiology.

2.7 Total number of hours

The student have to attend a minimum of 210 working days in an academic year. Minimum teaching hours recommended for each theory paper is 75 hours and minimum hours recommended for clinical practicum is 300 hours.

2.8 Branches if any with definition :

AUDIOLOGY&SPEECH-LANGUAGE PATHOLOGY

Definition of various Specialities

Audiology- Is defined as the science of hearing and balancing, art of its assessment and the habitation and rehabilitation of individuals with hearing and balancing disorders.

***Speech Language Pathology*-** Is defined as the branch of science which deals with Speech, language, deglutition and its disorders.

2.9 Teaching learning methods:

- Lecture and practical classes
- During the internship year the candidates should do 5 months of internship is in an external institute (approved by KUHS) and the remaining 5 months in the parent institute.

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2.10 Content of each subject in each year

1st Year BASLP

OA 010: INTRODUCTION TO SPEECH AND LANGUAGE PATHOLOGY & SPEECH DIAGNOSTICS AND THERAPEUTICS

INTRODUCTION TO SPEECH AND LANGUAGE PATHOLOGY

A. Introduction to Speech and Language

Unit1: Basic Concepts in speech, language and communication (5hours)

a. Definitions of communication, speech, language and their components.

b. Distinctions and similarities between them.

c. Basic models, levels, modes and functions of speech communication

d. Speech as an overlaid function, Speech chain.

Unit 2: Basis of speech (15 hours)

a. Physical-Generation and propagation of sound, absorption and reflection of sound, free and forced vibrations, resonance, frequency response, sound pressure and intensity, spectrum. Speech mechanism as sound generator, vocal tract, periodic and aperiodic sounds

b. Classification of speech sounds, Acoustic analysis and acoustic features of speech sounds, aerodynamics of speech production.

c. Physioiogical – Physiology of nervous, respiratory, phonatory, resonatory and articulatory systems

d. Social, psychological and linguistic basis of speech.

e. Neurobiological and cognitive basis of speech and language

Unit 3: Normal developmental aspects (5hours)

a. Normal development of speech and language

b. Development of articulation

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c. Development of voice.

d. Development of fluency and prosody

Introduction to speech and language pathology

Unit 4: Basic concepts (2hours)

a. Definition

b. Incidence and prevalence

c. Causes of speech and language disorders

Unit 5: Speech, language and behavioural characteristics of

a**.** Voice disorders. **(5hours)**

- Disorders of pitch, loudness, quality
- Alaryngeal voice
- Dysarthrophonia
- Cleft palate

b. Articulation disorders- Phonologic and phonetic disorders, apraxia in children and adults, dysarthria in children and adults. **(2hours)**

c. Fluency disorders -stuttering, cluttering, neurogenic stuttering (**2hours)**

d. Language disorders-aphasia in children and adults, cerebral palsy, mutism, pervasive developmental disorders, learning disability, agnosia, specific language impairment, mental retardation and hearing impairment, Seizure disorder **(4hours)**

PART: B. SPEECH DIAGNOSTICS AND THERAPEUTICS

A. Speech diagnostics

Unit 1 (5hours)

a. Basic terminologies and concepts

- Introduction to diagnostics
- Terminologies in the diagnostic process
- General principles of diagnosis
- Diagnostic setup and tools

Unit 2: (10 hours)

a. Diagnostic approaches and methods.

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- Approaches to diagnosis-case History, need for the case history, essential factors to be included in the case history form, comparison of adults V$ children case history, usefulness of the case history
- Interview -principles and techniques
- Self-reports, questionnaire, observations
- Diagnostic models -SLPM, Wepman, Bloom and Lahey
- Types of diagnoses -Clinical diagnosis, direct diagnosis, differential diagnosis. diagnosis by treatment, diagnosis by exclusion, team diagnosis, instrumental diagnosis, provocative diagnosis, tentative diagnosis; advantage/disadvantages
- Characteristics of a diagnostic clinician.

B. Speech therapeutics

Unit 3: (10hours)

a. Basic concepts of therapeutics

- Terminologies in speech therapeutics
- General principles of speech and language therapy
- Speech therapy set-up
- Individual and group therapy
- Integrated education

Unit 4 (5hours)

a. Procedures for speech-language therapy.

- Approaches to speech and language therapy -formal, informal and eclectic approaches
- Types of speech and language therapy
- Planning for speech and language therapy –goals, Steps, procedures, activities
- Techniques for

  -Speech and language therapy for various disorders of speech and language

  -Importance of reinforcement principles and strategies in speech and language therapy, types and schedules of reinforcement and punishment.

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Unit 5 (5hours)

a. Clinical documentation and professional codes

- Documentation of diagnostic, clinical and referral reports
- Introduction to parent counselling, facilitation of parent participation and transfer of skills, follow-up
- Evaluation of therapy outcome
- Ethics in diagnosis and speech language therapy
- Self-assessment and characteristics of a clinician.
- Roles and responsibilities of a speech language pathologist

OA 020: INTRODUCTION TO AUDIOLOGY & AUDIOLOGICAL EVALUATION

PART: A. INTRODUCTION TO AUDIOLOGY

Unit 1: (5hours)

a. Audiology -Historical aspects , Scope and branches

b. Anatomy and physiology of hearing mechanism

Unit 2 (10hours)

a. dB concept -Different aspects of the dB -power and pressure formulae, zero dB reference for pressure and power, calculation of actual SPL, reference and dB values with any two given values, calculation of overall dB when two signals are superimposed, hearing level, sensation level, application of dB
b. Threshold concept, threshold of audibility, MAP and MAF, threshold of pain, MCL, UCL, dynamic range, application.

Unit 3 (8hours)

a. Frequency and intensity: Octave frequency concept, their psychological correlates, relationship between pitch & frequency and pitch & intensity, differential sensitivity, differential threshold , JND, DL for frequency and intensity.
b. Phons and sones -relation between phones and sones, use of phone and sone graph,

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computation of relative loudness of two given sounds using these graphs.

Unit4 (8hours)

a. Classification of hearing loss

b. Causes of hearing impairment

c. General characteristics of conductive, mixed and sensorineural hearing loss, hereditary deafness, congenital deafness, acquired hearing loss in children and adults, central auditory disorders.

Unit 5 (5hours)

a. Tuning fork test -Rinne, Schwabach, Weber and Bing, ABC, interpretation, advantages, disadvantages, audiometric version of Weber and Bing test.

PART: B.AUDIOLOGICAL EVALUATION

Unit 1: (8hours)

a. Case history -Need for the case history, essential factors to be included in the case history form, comparison of adults vs. children case history, usefulness of the case history

b. Puretone audiometer: Historical developments, rationale behind puretone audiometry, classification of audiometers, parts of an audiometer, audiogram, symbols used, methods of obtaining pure tone thresholds, interpretation of audiogram, usefulness of audiogram, factors that affect AC threshold.

   Bone conduction -historical developments, different types of BC vibrators, factors affecting BC thresholds including vibrator placement, size of vibrator, force of application, occlusion effect, central masking ,problems in bone conduction testing Rainvelle and SAL tests.

c. Indian and international standards.

Unit 2 (6hours)

a. Calibration of audiometers: - Subjective and objective calibration, real ear methods for AC and BC calibration, electro-acoustic calibration of the output intensity through the

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headphones, insert receiver and bone vibrators, frequency calibration. Calibration of speech stimulus. Indian and International standards.

Unit 3 (5hours)

a. Transducer -NBS 9A -performance of different types of earphones -WF 705, TDH-39, TDH-49, TDH-50, ER-3A,earcushions,Radio ear B-71. Artificial ear, artificial mastoid Indian and international standards.

Unit 4 (10hours)

a. Speech audiometry:-historical developments, Need for speech audiometry, different types of stimuli used for speech audiometry
b. Speech detection threshold ,speech recognition threshold , speech Identification score, UCL, MCL, Dynamic range
c. Procedure for obtaining SDT, SRT and SIS,UCL,MCL, Dynamic range.
   SDT, SRT, and PT A correlation and disagreements , PIPB function
d. Factors affecting speech audiometry:
e. Speech materials available in Indian languages.
f. BC speech audiometry
g. Clinical applications of speech audiometry

Unit 5 (10hours)

a. Masking: Definition, clinical use of masking for AC and BC and speech. Different types of noise employed as maskers, Interaural attenuation, factors that affect interaural attenuation, when to mask, how much to mask, procedures for AC,BC and speech masking, factors to be considered in adequate masking.
   An alternative approach for AC masking: fusion -inferred threshold.

OA 030: ANATOMY, PHYSIOLOGY AND PATHOLOGY OF SPEECH AND HEARING SYSTEMS

A. Anatomy and Physiology of speech and auditory systems

Unit 1: (5hours)

a. Preliminaries -The anatomical position, general anatomical terms, directions and locations, body planes, pairings, naming

b. Elementary tissues -epithelial tissues, connective tissues, special connective tissues,

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muscle tissue, nervous tissue, vascular tissue.

Unit 2: (12hours)

a. Embryology of the speech mechanism-Pharyngeal arches and derivatives, Face ,Palate, Tongue and Larynx

b. Embryology of external, middle, inner ear

c. Anatomy and physiology of the respiratory, phonatory, articulatory systems.

Unit 3: (3hours)

a. Blood supply for the speech mechanism

b. Blood supply for the hearing mechanism

Unit 4: (20hours)

a. External ear - anatomy and physiology of the pinna, external auditory canal

b. Middle ear -anatomy of the tympanic membrane, ossicular chain, Eustachian tube, walls of the tympanic cavity, muscles, ligaments and tendons. Physiology-transformer action of the middle ear, Function of the middle ear muscles and Eustachian tube.

c. Inner ear: - Anatomy -parts of the inner ear, bony labyrinth and membranous labyrinth, cochlea, Semicircular canals, utricles, saccule, innervation to the cochlea.

Physiology of the cochlea, cochlear microphonics, summating potential, theories of hearing in brief, modes of bone conduction, physiology of the SSC, utricle and saccule.

Unit 5 (10hours)

a. Auditory pathway and central hearing mechanism: Anatomy of the afferent and efferent auditory pathway, action potential

B. Pathology of speech and hearing systems

Unit 1 (4hours)

a. Introduction to pathology, cell injury and cellular adaptations. The normal cell, etiology of cell injury, pathogenesis of cell injury, pigments, atrophy, hypertrophy, cellular aging.

Unit 2 (4hours)

a. Immune pathology, inflammation and healing, components of immune system, diseases of immunity; inflammation, chemical mediators of inflammation, morphology of inflammation, regeneration, factors influencing healing.

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Unit 3 (5hours)

a. Infectious diseases with reference to speech and hearing systems

b. Environmental and nutritional diseases

Unit 4 (6hours)

a. Pathologies of the laryngeal, articulatory and phonatory systems, inflammatory conditions, tumours, developmental anomalies, carcinoma.

Unit 5 (6hours)

a. Pathologies of the auditory systems -inflammatory lesions of the ear, tumors.

OA 040: BIOMEDICAL INSTRUMENTATION AND ACOUSTICS

A. Introduction to electronic devices

Unit 1: (10 hours)

a. Basic principle of operation and working of

- Resistors, potentiometers, capacitors, inductors and transformers
- Semiconductor diodes and transistors
- LEDs seven segment displays, LCDs
- FETs, UJTs

b. Introduction to linear and digital integrated circuits

c. DC power supply.

- Block diagram of a DC power supply, description and working of each block
- Linear regulated power supplies, line regulation and load regulation, specifications of a DC power supply unit
- SMPS

d. AC power supply

- AC voltage stabilizers -manual, automatic and servo controlled
- UPS, CVT and inverters

e. Signal characteristics

B. Fundamentals of acoustics

Unit 2 (20 hours)

a. Physics of sound

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- Nature and propagation of sound
- Sound characteristics such as frequency, pitch, amplitude, intensity
- Wavelength and loudness -sone, phonsetc
- Sound pressure level, sound power level.

b. Quality and properties of sound

- Frequency response and its control, harmonic structure
- Reflection and absorption, acoustic impedance, reverberation, artificial reverberation

c. Acoustic treatment

- Choosing the right acoustic
- Absorption coefficient, Sabine's formula

d. Sound treatment, reproduction and recording

- Microphones -carbon, piezoelectric, moving coil, condenser etc
- Loudspeaker and their enclosures.
- Magnetic tape recording and reproduction, optical disc recording and reproduction
- Sound level meters

C. Introduction to computers and digital electronics

Unit 3 (15 hours)

a. Fundamentals of digital electronics

- OJ Binary number system, Hex code, bit, byte, etc,
- Logic gates, counters, flip-flops etc.

b. Introduction to computers

- Block diagram of a computer
- Hardware, software, memory devices and other peripherals
- Specifications of a personal computer
- Care and preventive maintenance of computers and peripherals.

D. Instrumentation for speech and hearing.

Unit 4 (15 hours)

a. Introduction to electronic instrumentation

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- Transducers and electrodes
- Filters and pre-amplifiers
- Power amplifiers and oscillators etc.

b. Principle of operation, block diagram, calibration, maintenance and troubleshooting, procedures for

- All types of hearing aids
- Audiometers
- Immittance meters
- Electro-acoustic impedance bridge
- Induction loop system
- Speech spectrograph
- Artificial larynx
- OAE analyzer

c. Safety aspects, care and preventive maintenance of biomedical instruments

E. Introduction to digital signal processing

Unit 5 (15 hours)

a. Need for digital signal processing and its advantages over analog signal processing

b. Analog to digital and digital to analog converters.

c. Basics of an IIR and FIR systems,

d. Applications of digital signal processing in speech and hearing field.

OA 050: LINGUISTICS, PHONETICS AND LANGUAGE SCIENCES

Unit 1: Linguistics (15hours)

a. Introduction to Linguistics -characteristics of language, difference between animal communication systems and human language. Functions of language brief introduction to different branches of linguistics and special reference to sociolinguistics, psycholinguistics, neurolinguistics and clinical linguistics

b. Morphology -concepts of morph, allomorph, morpheme, bound free and compound forms, roots etc. Processes of word formation, content and function words, endocentric

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and exocentric constructions, form classes, grammatical categories. inflection and derivation, paradygmatic and syntagmatic relationship. Principles and practices of morphemic analysis.

Unit 2: Syntax, semantics and applied pragmatics: (15hours)

a. Syntax-different methods of syntactic analysis -IC analysis, phrase structure, grammar, transformational generative grammar -Introduction to the major types of transformations. Sentence types, notions about competence versus performance, deep structure versus surface structure, acceptability versus grammaticality, langue versus parole etc.

b. A brief introduction to semantics - key concepts in semantics like sense and reference, different types of meaning, semantic feature theory etc

c. A brief introduction to Pragmatics - discourse, speech act theory, maxims of conversation**.**

Unit 3: Phonetics and phonology (15hours)

a. Introduction to phonetics and its different branches-articulatory, acoustic, auditory and experimental phonetics, air-stream mechanism, articulatory classification of sounds-segmentals and supra-segmentals, classification description and recognition of vowels and consonants. Pathological aspects of speech sounds production

b. Transcription systems with special emphasis on IPA. Transcription of samples of normal and disordered speech.

c. Introduction to phonology, classification of speech sounds on the basis of distinctive features, Application of distinctive feature theory to speech pathology and speech therapy, phonotactics, phonotactic patterns of English and Indian languages, phonemic analysis-Principles and practices; their practical implications for speech pathologists, common phonological processes like, assimilation, dissimilation, metathesis, haplology, epenthesis, spoonerism, vowel harmony, nasalisation, neutralization.

Unit 4: 'Language acquisition and Applied Linguistics' (15hours)

a. Issues in first language acquisition-prelinguistic stages, linguistic stages, acquisition of Phonology, acquisition of morphology, acquisition of syntax, acquisition of semantics, acquisition of pragmatics, language and cognition. communicative competence, second

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language learning and bilingualism

b. A brief introduction to theories and models of language acquisition -biological maturation theory, linguistic theory, behavioural theory, information processing theory, social interaction theory An integrated approach to these theories communicative competence and its development.

c. Issues in second language acquisition -inter-language theory, language transfer and linguistic interference, the factors influencing second language acquisition/learning, differences between first language acquisition and second language acquisition/learning. Bilingualism.

d. Applied linguistics with special reference to communication disorders. Usefulness of morphemic and syntactic analysis in planning speech and language therapy.

Unit 5: Issues in multilingualism (15hours)

a. An introduction to the language families of the world.

b. An introduction to the language families of India

c. Writing systems -types of writing, history of writing systems, Indian writing systems

OA 060: PHYCHOLOGY RELATED TO SPEECH AND HEARING

Unit 1 (7hours)

a. Definition of clinical psychology – historical development, modern history of clinical psychology, its current status and scope as a specialty in health sciences, role of clinical psychology in speech and hearing disorders.

b. Concept of normality and abnormality, models of mental disorders, biological, psychological, social models.

Unit 2 (12hours)

a. Methodology in clinical psychology – case history, clinical interviewing, clinical observation, types of psychological assessments, considerations for speech and hearing disorders

b. classification of abnormal behaviour; history, need, rationale , present systems- DSM and ICD

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Unit 3 (26hours)

a. Motor development – early motor development –stages in motor development – manipulate behaviour, handedness, development of complex motor skills, motor development during later childhood and adolescence, decline with age
b. Cognitive development – evolutionary growth of intelligence, growth from early childhood to adolescence, decline with age, Piaget's theory of cognitive development
c. Emotional and social development
d. Assessment of cognitive functions, personality, interpersonal relationships, diagnosis and tests used and interpretation of test results.

Unit 4 (18hours)

a. Learning: Introduction- definition of learning – scope and methods – types of learning – importance of studying psychology of learning in communication disorders
b. Experimentation in learning – human and animal learning – quantitative assessment of learning, learning curves
c. Theories of conditioning – classical conditioning by Pavlov and its principles, operant conditioning by Skinner and its principles.

Unit 5 (12hours)

a. Biological, neurochemical, neuropsychological, neurophysiological correlates of learning
b. Techniques derived based on operant conditioning, shaping, chaining, prompting, time-out, token economy, reinforcement and contingency management, aversive therapy.

OA070: GENETICS, PEDIATRICS AND NEUROLOGY

A. Genetics

Unit 1 (5 hours)

Basics of genetics: Genes, Chromosomes, Traits, DNA structure, DNA replication, Mutations, DNA repair, Protein synthesis, Genetic code, Mitosis, Meiosis

Symbols used in pedigree construction

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Mendel's principles, Modes of inheritance, Mendelian Disorders, Exceptions to Mendel's principles, Non-traditional modes of inheritance

Unit 2 (5 hours)

Molecular techniques: Polymerase Chain Reaction (PCR), Electrophoresis, Blotting techniques, Single nucleotide polymorphism (SNP), Restriction enzymes, Restriction fragment length polymorphism (RFLP), Cloning, DNA sequencing, Microarray, Next generation sequencing

Cytogenetics- Karyotyping, Fluorescence in situ hybridization (FISH), Comparative genomic hybridization (CGH), Numerical aberrations, Structural aberrations, Sex chromosome anomalies

Unit 3 (5 hours)

Identification of disease genes: Single gene disorders, Complex genetic disorders, Linkage analysis, LOD score, Genetic Association studies, Genome-wide association studies (GWAS), Meta-analysis

Human genome mapping project (HGMP), Reference Sequence Database

Unit 4 (5 hours)

Communication disorders: Chromosomal syndromes, Single-gene syndromes, Polygenic multifactorial syndromes, Sporadic syndromes, Environmental syndromes

Unit 5 (5 hours)

Genetic components of communication impairment: Autism, Dyslexia, Mental Retardation, Cerebral Palsy, Stuttering, Syndromic hearing impairment, Non-syndromic hearing impairment

Genetic counseling, Risk evaluation, Management of genetic disorders

Gene therapy

Pediatrics

Unit 1: (3hours)

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a. Growth and development -basic concepts, growth from birth to puberty, growth during adolescent period.

Unit 2: (3hours)

a. Early identification of perinatal pediatric disorders leading to speech and hearing impairment.

Unit 3: (3hours)

a. Nutritional disorders in children -protein energy malnutrition, water soluble vitamins, fat soluble vitamins, trace elements.

Unit 4: (10hours)

a. Childhood disabilities -developmental diseases, cerebral palsy, attention deficit hyperactivity disorder, learning disability, childhood autism, early detection therapy for developmental delay

PART B: NEUROLOGY

Unit 1 (10hours)

a. Central nervous system -neural structure, applied anatomy, cranial nerves, blood supply, circle of Willi.

b.Transmission of information in neural system-nerve fibres, synaptic transmission, action potential, chemical transmission, excitatory and inhibitory potential, neuromuscular transmission.

Unit 2 (4hours)

a. Developmental anomalies -spinal cord defects, syringomalacia and bulbia, Arnold chain malformations.

b. Hydrocephalus-source and circulation of CSF, types and etiopathogenesis.

Unit3 (3hours)

a. infections-meningitis, encephalitis

Unit 4 (10hours)

a. Cerebrovascular diseases -ischeamic brain damage -hypoxic ischaemic encephalopathy, cerebral infarction -intracranial hemerrhage -intracranial, subarachnoid.

b. Trauma to the CNS-subdural haematoma, epiduralhaemotoma parenchymal brain damages

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c. Demyelinating diseases-multiple sclerosis, perivenous encephalomyelitis

d.Degenerative, metabolic and nutritional disorders-Alzheimer's disease, parkinsonism, metabolic hereditary, acquired-neuronal storage disorder, Wilson's disease, phenylketoneuria, nutritional- Wernicke's encephalopathy, pellagra, alcoholic cerebellar degeneration.

Unit 5 (4hours)

a. Tumours of the CNS -Gliomas, embryonaltumours of meninges, metastatic Peripheral nervous system -structure and function of peripheral nerve, nerve sheath tumours - schwannoma, neurofibroma and Von Recklinghausens's disease, malignant peripheral nerve sheath tumours.

IInd year BASLP

0B010: NORMAL AND ABNORMAL ASPECTS OF ARTICULATION

PART A: PHOLNOLOGICAL DISORDERS

Unit 1 (10 hours)

- Definition of articulation, place and manner of articulation of different speech sounds, cardinal vowels, secondary cardinal vowels, secondary articulation
- Normal development of articulation and Phonology, phonological processes, theories and models of phonological development

Unit 2 (10 hours)

- Acoustics of vowels, consonants and supra segmentals, co-articulation and its types,
- Distinctive features -different systems and implications
- Factors affecting the development of articulation: structural, cognitive-linguistic and psychosocial.

Unit 3 (5hours)

Misarticulation and phonological disorders:

- Definition, epidemiological findings, incidence and prevalence
- Causes -sensory, structural, motor and neurological causes
- Types of misarticulation: lisping, rhotacism -definition, types and characteristics.

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Unit 4 (10 hours)

- Factors related to misarticulation
- Assessment of articulatory and phonological disorders

(i) Modes of testing

(ii) Classification of assessment test materials, criteria for selection of assessment instruments, factors to be considered in the construction of test materials

(iii) Objective methods of assessment

(iv)Assessment of associated skill areas such as oral peripheral mechanism, speech sound discrimination, stimulability and oral stereognosis

(v) Analysis and interpretation of data: intelligibility and severity judgements.

- Articulatory and prosodic problems associated with hearing impairment, dysarthria, cerebral palsy and mental retardation.

Unit 5 (10 hours)

- Articulation therapy techniques: definition and stages of articulation therapy - sequence of therapy -MIDVAS

Motoric approaches -progressive approximation, integral stimulation, motokinesthetic approach, phonetic placement, multiple phoneme approach, traditional therapy,programmed conditioning therapy, sensory motor therapy, motoric automatization, Linguistic approaches -distinctive feature therapy, minimal pair therapy, language based therapy

Instrumentation in the therapy of articulation and phonological disorders.

PART. B: MAXILLOFACIAL ANOMALIES

Unit 1 (8hours)

- Embryology -development of the lip ,nose and palate
- Types and classification of cleft lip and palate
- Causes -genetic, environmental and other causes

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Unit 2 (8hours)

- Associated problems: Communication disorders, Feeding, psychological and dental problems
- Syndromes associated with cleft palate
- Assessment of cleft lip/palate and its sequelae -instrumental and perceptual.

Unit3 (6hours)

- Management of cleft lip and palate: surgical, speech therapy, prosthetic

Unit4 (6 hours)

Velopharyngeal Dysfunction

- Definition, causes and classification
- Compensatory articulation
- Assessment and management of VPI

Unit5 (2hours)

- Glossectomy, mandubulectomy-types, speech characteristics and management.

0B020: FLUENCY AND ITS DISORDERS

Unit 1 (10hours)

a. Fluency: definition, development of fluency, factors influencing fluency
b. Definitions of intonation, rhythm, stress -development of intonation, rhythm, stress. Their implications to therapy
c. Evaluation of fluency
d. Other prosodic features in fluency disorders.

Unit 2 (15hours)

a. Stuttering

- Definition, etiology, epidemiological findings, prevalence and incidence
- Stuttering: characteristics, nature of stuttering, adaptation effect, consistency effect, situational variability, stuttering and heredity.

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b. Normal non-fluency, primary stuttering, secondary stuttering

c. Development of stuttering

d. Differential diagnosis of developmental stuttering from neurogenic stuttering, cluttering, normal nonfluency.

Unit 3 (15hours)

a. Introduction to theories of stuttering -organic vs. functional, cerebral dominance, diagnosogenic and learning theories, demands and capacities model

b. Assessment and diagnosis of stuttering and associated problems, prevention of early stuttering.

Unit 4 (20hours)

a. Therapy for stuttering: Rationale and procedure, advantages and disadvantages

- prolongation, shadowing, habit rehearsal techniques, DAF, masking, shock therapy, desensitization, highlighting, time out, air flow and modified air flow, sequence of therapy,FIG
- Analogies
- MIDVAS ☐ transfer and measurement of therapy progress, naturalness rating.
- Recent advances

Unit 5 (15hours)

a. Cluttering- definition, etiology, characteristics, differential diagnosis, associated problems and assessment procedure, therapeutic consideration

b. Neurogenic stuttering-characteristics, etiology, differential diagnosis and management issues.

0B030: NORMAL AND ABNORMAL ASPECTS OFVOICE & LARYNGECTOMY

PART A: VOICE

Unit 1 (10hours)

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a. Voice

- Definition, review of anatomy of the respiratory, phonatory and resonatory systems
- Development of voice and factors influencing
- Theories of phonation
- Characteristics of normal voice. Physiological, acoustical and aerodynamic correlates of voice

Unit 2 (15hours)

a. Definition of normal and abnormal voice

- Causes and classification of abnormal voice
- ncidence and prevalence of abnormal voice.

b. Causes, diagnosis, differential diagnosis and therapy for

- Hysterical aphonia
- Spasmodic dysphonia
- Plica-ventricularis
- Mutational voice disorders
- Diplophonia

c. Vocal hyperfunctional disorders

- Vocal abuse
- Voca1 nodule, vocal polyp, contact ulcer

Unit 3 (15 hours)

a. Voice problems in geriatrics

b. Voice problems in conditions like Cerebral palsy, mentally retardation, Cleft lip and palate

c. Neurological problems resulting in voice disorders

d. Paralysis of the vocal cords -causes, types, characteristics, differential diagnosis and management

e. Voice problems in hearing impaired

f. Congenital voice disorder

g. Voice problems in Endocrine disorders

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h. Resonatory disorders-hypernasality, hyponasality, causes, characteristics and management.

i. Voice problems in professional voice users

Unit 4 (10 hours)

Evaluative procedures and Instrumentation for:

• Invasive procedures – endoscopic procedures

• Non-invasive (Acoustic, perceptual, aerodynamic, Electro Glottogram,

Inverse filtering procedures)

• Comparison of normal and abnormal voice patterns based on the above procedures

Unit 5 (10 hrs)

- Medical/Surgical procedures in the treatment of voice disorders
- Voice therapy – various techniques
- Professional voice users: Definition, types, characteristics, importance of vocal hygiene and professional voice care

PART B: Laryngectomy

Unit 1 (15hours)

a. Definition, incidence and prevalence

b. Causes and symptoms of laryngeal cancer

c. Types and characteristics of laryngectomy surgery

d. Total laryngectomy-definition, characteristics, associated problems

e. Assessment of laryngectomy.

f. Management of laryngectomy

- Esophageal speech –anatomy, candidacy, different types of air intake procedure, speech characteristics in esophageal speech
- Tracheo-esophageal speech -anatomy, candidacy, different types of TEP, fitting of prosthesis, speech characteristics, complications in TEP
- Artificial larynx -different types, selection of artificial larynx, speech characteristics
- Pharyngeal speech, buccal speech, ASAI speech, gastric speech
- Pre and post-operative counseling

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0B040: DIAGNOSTIC AUDIOLOGY

PART A: DIAGNOSTIC AUDIOLOGY: BEHAVIOURAL TESTS

Unit 1 (8hours)

a. Introduction to diagnostic audiology

- Need for test battery approach in auditory diagnosis and integration of results of audiological tests.
- Indications for administering audiological tests to identify--Cochlear pathology
  -Retrocochlear pathology -
  Functional hearing loss
  -Central auditory processing disorders

Unit 2 (8hours)

a. Tests to differentiate between cochlear and retrocochlear pathology

- ABLB, MLB
- SISI,modified SISI
- Tests for adaptation
- Bekesy audiometry
- Brief tone audiometry
- PIPB function

Unit 3 (5hours)

a. Tests to detect pseudohypoacusis

- Pure tone tests including tone in noise test, stenger test
- Speech tests including Lombard test, Stenger test, lip-reading test, Doeffler -Stewert test
- Identification of functional hearing loss in children

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Unit 4 (8hours)

Tests to detect central auditory disorders -

a. Monoaural low redundancy tests-(i) Filtered speech tests, (ii) Time compressed speech test, (iii) Speech-in-noise test, (iv) SSI with ICM, (v) Other monaural low redundancy tests.

b. Dichotic speech tests -(i) Dichotic digit test, (ii) Staggered spondaic word test, (iii) Dichotic CV test, (iv) SSI with CCM, (v) Competing sentence test, (vi) Other dichotic speech tests.

c. Binaural interaction tests-(i) RASP (ii) BFT, (iii) MLD, (iv) Other binaural interaction tests

d. Temporal ordering tasks (i) Pitch pattern test, (ii) Duration pattern tests, (iii) Other temporal ordering tests.

Unit 5 (8hours)

a. Variables influencing central auditory assessment

- Procedural variables
- Subject variables

b. Test findings in subjects with central auditory disorders

- Brainstem lesion
- Cortical and hemispheric lesion
- Interhemispheric dysfunction
- CAPD in children
- CAPD in elderly

PART B: DIAGNOSTIC AUDIOLOGY: PHYSIOLOGICAL TESTS

Unit 1 (10hours)

Immittance evaluation

a. Introduction
b. Principle of immittance evaluation, instrumentation
c. Tympanometry -tympanometric peak pressure, static immittance, gradient/ tympanometric width, compensated tympanogram
d. Reflexometry: reflex path way,ipsilateral and contralateral acoustic reflexes, special tests,Jerger box pattern

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e. Clinical application of immittance evaluation

f. Immittance evaluation in the pediatric population

Unit 2 (10hours)

Auditory brainstem response

a. Introduction and classification of AEPs

b. Instrumentation

c. Test procedure

d. Factors affecting auditory brainstem responses

e. Interpretation of results and clinical application

i. ABR in the pediatric population

Unit 3 (5hours)

Middle and late latency auditory evoked potentials

a. Test procedure

b. Factors affecting middle and long latency evoked potentials

c. Interpretation of results and clinical application

d. Findings in the pediatric population

Unit 4 (8hours)

Otoacoustic emissions

a. Introduction and classification of OAEs

b. Instrumentation

c. Measurement of OAE procedure

d. Interpretation of results and clinical application

e. Findings in the pediatric population

Unit 5 (5hours)

Vestibular system and assessment

a. Introduction to structure and function

b. Symptoms of vestibular disorders

c. Assessment

- Caloric tests

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- Behavioural tests
- Electronystagmography

0B050: EDUCATIONAL AUDIOLOGY

Unit 1 (5hours)

a. Definitions and goals in aural rehabilitation, classification of hearing handicap

b. Early identification and its importance in aural rehabilitation.

Unit 2 (6hours)

a. Unisensory vs. multisensory approach

b. Acoupedic approach

c. Manual vs. oral form of communication, manual communication systems that parallel English (Manual alphabet); interactive systems (cued speech: Rochester method); those alternative to English (ASL) Indian Sign Language, Contrived system (SEE-I, SEE-II, Signed English)

d. Total communication.

Unit 3 (6hours)

a. Methods of teaching language to the hearing impaired

b. Natural method: maternal reflective method

c. Structured method (grammatical method); Fitzgerald key, box technique, others

d. Computer aided method.

Unit 4 (9hours)

a. Educational placement of hearing impaired children:

- Preschool training
- Integration
- Partial integration
- Segregation: day school vs. residential school

b. Criteria for recommending the various educational placements c. Factors affecting their outcome.

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Unit 5 (9hours)

a. Educational problems of hard-of-hearing in India.

b. Counseling the parents and teachers regarding the education of the hearing handicapped

c. Setting-up classrooms for the hearing handicapped

d. Home training - need, preparation of lessons, correspondence programs, follow-up.

REHABILITATIVE AUDIOLOGY

Unit 1 (6hours)

Management of children with special needs

a. Management of the deaf-blind child

b. Management of children with central auditory processing problems

Unit 2 (10hours)

Speech reading

a. Definitions

b. Need (i) For those with hearing aids; tactile devices; cochlear implants (ii) for those without devices (iii) for children (iv) for adults. .

c. Visibility of speech sounds -audiovisual perception vs. visual perception

d. Visual perception of speech by the hard-of-hearing

e. Tests for speechreading ability

- Denver quick test of lipreading ability
- John Tracy clinic test
- Utlay test
- Helen test
- Mason multiple choice test

Unit 3 (8hours)

a. Factors influencing speechreading

- Related to the speechreader
- Related to the speaker
- Related to the environment

b. Methods of training: analytical vs synthetic (including speech tracking)

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c. Individual and group training

- Purpose
- Requirement for each -i.e. space, number, selection of participants

- Other consideration

Unit 4(8hours)

Auditory learning

a. Definitions and historical background

b. Role of audition in speech and language development in normal children and its application in education of the hearing impaired

c. Factors in auditory training: Motivation of the case, intelligence, age, knowledge of progress, etc.

d. Methods of auditory training

e. Individual vs group auditory training

Unit 5 (8hours)

a. Communication strategies

- Anticipated strategies
- Repair strategies

b. Speech reading activities

- For adults and children
- For individual vs. group activities

c. Auditory training activities

- For patients of different age groups
- In patients with congenital and acquired hearing losses
- Verbal vs. nonverbal material
- For individual vs group activities

0B 060: OTOLARYNGOLOGY

Unit 1 (25hours)

a. Disease of the external, middle and Inner ear leading to Hearing loss:-

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a) Congenital malformations

i) Congenital deformities of pinna

ii) Congenital deformities of external auditory Meatus

iii) Congenital anomalies of middle ear

iv) Congenital anomalies of inner ear

b) Traumatic lesions

i) Traumatic lesions of external and middle ear

- Wax
- Foreign body
- Traumatic perforation of Tympanic membrane
- Traumatic ossicular chain disruption

ii) Traumatic lesions of inner ear

- Acoustic Trauma

c) Infections

i) Infections of External ear

- Otitis externa
- Perichondritis
- Keratosis Obturans

ii) Infections of middle ear

- ASOM
- Secretory Otitis media
- CSOM
- Adhesive Otitis Media
- Barotraumatic Otitis Media
- Complications of Otitis Media

iii) Infections of Inner ear

- Labyrinthitis

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- Congenital syphilis

Unit – 2(25hours)

a) Causes of Hearing loss: -

i) Congenital

ii) Acquired

- Ototoxicity
- Presbyacusis

iii) Other causes of hg loss:

- Otosclerosis, ,
- Functional Hearing loss ,
- Facial paralysis,
- Tumors of C.P Angle,
- Acoustic neuroma

iv) Tinnitus

v) Menier's disease

Unit – 3(25hours)

a) Causes of speech disorders

i) Disease of mouth

- Stomatitis
- Aphthous Ulcer
- Fungal Infections of oral cavity
- Oral submucosal fibrosis
- Vincents angina
- Ankyloglossia
- Ludwig's angina
- Avitaminosis

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ii) Tumors of Jaws and oral cavity

- Amyloblastoma
- Lymphoma
- Fibroma
- Myxoma
- Epulis
- Other Benign tumors of oral cavity like Adenoma, Lypoma
- Cyst of oral cavity:- ranula, mucosal cyst, cysts of Dental origin
- Tumors of tongue
- Congenital lesions of tongue:- Lingual thyroid, thyroglossal cyst.
- Congenital lesions of palate:- Cleft palate

iii) Nasopharynx and pharynx

- Benign and malignant tumors of nasopharynx
- Benign and malignant tumors of pharynx
- Pharyngitis
- Pharyngeal pouch

iv) Diseases of tonsils and adenoids

- Tonsillitis
- Lingual Tonsillitis
- Peritonsilar abscess (Quinsy)
- Tonsilolith
- Tonsil cyst
- Intra TonsilarAbsess
- ParapharyngealAbsess
- Adenoiditis

Unit 4 (25hours)

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a) Congenital disease of larynx: Differences between an infant and an adult larynx, stridor, causes of infantile strider, disorders of structure-laryngomalacia. Bifid epiglottis, laryngeal web, atresia, post laryngeal cleft, paralysis of vocal cords, tumors and cysts,

- Laryngitis
- laryngeal trauma
- Stenosis
- Subglottic stenosis
- Laryngeal oedema
- Vocal cord paralysis – RLN and SLN, abductor and adductor palsy
- Vocal nodules
- Contact ulcers
- Vocal cord polyp
- Tuberculous laryngitis
- Papillomas

Unit 5(25hours)

a) Oesophageal conditions: congential abnormality- atresia, tracheo-oesopharyngeal fistula, stenosis, short oesophagus, Neoplasms-benign malignant, Oespharyngealvarices

0B070: STATISTICS AND RESEARCH METHODS & EPIDEMIOLOGY RELATED TO SPEECH AND HEARING

Unit 1 (10 hours)

a. Introduction, definition, importance of statistics in behavioural sciences, descriptive statistics and inferential statistics, usefulness of qualification in behavioural sciences (application to speech and hearing)

b. Measurements – scales of measurements – nominal, ordinal, interval and ratio scales.

Unit 2 (10 hours)

a. Data collection, classification of data, class intervals, continuous and discrete measurements, drawing frequency polygon, types of frequency polygon, histogram, cumulative frequency curve, Ogives, drawing inference from graph. Methods of sampling, use of sampling, use of

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sampling methods in various situations, types of sampling, interference.

Unit 3 (10 hours)

a. Measures of central tendency, need, types: mean, median, mode, working of these measures with illustrations. Measures of variability – need, types: range, quartile deviation, average deviation, standard deviation, variance, interpretation. Normal distribution- general properties of normal distribution, theories of probability, illustration of normal distribution, area under the normal probability curve and application. Variance from the normal distribution, skewness, quantitative measurement of skewness, kurtosis, measurement of kurtosis, Factors contributing for non normal distribution.

Unit 4 (10 hours)

a. Correlation – historical contribution, meaning of correlation, types: product moment correlation, variation of product- moment correlation, rank correlation.

b. Methods of significance – need for, significance of the mean, sampling error, significance of differences between means, interpretation of probability levels, small samples, large samples.

Unit 5 (10 hours)

a. An introduction to research – the formal and formative approaches

b. Methods of research in behavioural sciences – research designs, measuring, purpose, principles, needs, applications between group designs and single subject research designs.

c. Doing, reporting and evaluation research – formulation of research questions, principles of good writing, internal consistency evaluation, evaluation of research reports.

Epidemiology

Unit 1 (5hours)

a. History of speech and hearing

b. Population at risk for hearing loss and communication delay at risk children, established risk children, high risk checklist.

Unit 2 (7 hours)

a. Incidence and prevalence of communication disorders, speech defects in general, phonological disorders, stuttering, voice disorders, language disorders -in children, adults and geriatric population,

b. Incidence and prevalence of hearing loss -in children, adults and geriatric population, in

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general various types of hearing loss.

Unit 3 (3 hours)

a. Epidemiologic methods -questionnaire survey, screening, personal survey, testing, media.

Unit4 (5 hours)

a. Practicals I -school screening for incidence of communication disorders and hearing loss in rural and urban population.

Unit 5 (5 hours)

a. Practicals II -community services -survey for incidence of communication disorders and hearing loss in

-Rural population

-Urban population

-Children

-Adults

-Geriatrics

IIIrd year BASLP

OC010: MOTOR SPEECH DISORDERS AND DYSPHAGIA

Unit1 (15hours)

a. Introduction to neuromotor organization and sensorimotor control of speech

- Motor areas in cerebral cortex, motor control by sub cortical structures, brainstem, cerebellum and spinal cord
- Central nervous system and peripheral nervous system in speech motor control
- Centrifugal pathways and motor control
- Neuromuscular organization and control
- Sensorimotor integration.
- Introduction to motor speech disorders in children-dysarthria and developmental apraxia

Unit 2 (10hours)

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a. Cerebral Palsy

- Definition, causes and classification
- Different types of cerebral palsy

- Disorders of muscle tone -spasticity, rigidity, flaccidity, atonia

- Disorders of movement -Hyperkinesia and dyskinesia -Ballismus, tremor, tic disorder,

- Myoclonus, athetosis, chorea, dystonia, hypokinesia

- Disorders of coordination - ataxia

Neuromuscular development in normals and cerebral palsy

Reflex profile.

Associated problems.

- Assessment of speech in cerebral palsy -objective and subjective methods
- Differential diagnosis of cerebral palsy
- Introduction to different approaches .in neuromuscular education (Bobath, Phelps,etc)
    - -Verbal approaches -vegetative exercises, oral sensorimotor facilitation techniques, -compensatory techniques-correction of respiratory, phonatory, resonatory& articulatory errors
- Team approach to rehabilitation
- Neuro-surgical techniques for cerebral palsy

Unit 3 (5hours)

a. Apraxia of speech in children or developmental apraxia

- Definition.
- Description -verbal and nonverbal apraxia
- Differential diagnosis-dysarthria and other developmental speech disorders
- Management of developmental apraxia of speech -facilitation techniques for oral motor movements, speech therapy techniques, generalization of speech

Unit 4 (5hours)

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a. Syndromes with motor speech disorders. Examples-

- Juvenile progressive bulbar palsy, Congenital supranuclear palsy, Guiliain-Barre syndrome, Duchenne Muscular dystrophy

Unit 5 (5hours)

a. Application of alternative and augmentative communication methods in developmental dysarthria and developmental apraxia of speech -symbol selection, techniques for communication, assessment for AAC candidacy, choosing an appropriate system and technique, training communication patterns, effective use of AAC.

PART B: MOTOR SPEECH DISORDERS IN ADULTS

Unit 1 (10hours)

a. Definition and classification of dysarthria in adults

b. Types of dysarthria in adults

c. Neurogenic disorders leading to dysarthria in adults

- Vascular disorders -dysarthria following strokes, CVA, cranial nerve palsies and peripheral nerve palsies
- Infection condition of the nervous system –eg: Meningitis, polyneuritis and neurosyphilis
- Traumatic conditions -traumatic brain injury and dysarthria
- Toxic conditions -dysarthria due to exogenic and endogenic causes.
- Degenerative and demyelinating conditions-multiple sclerosis, Parkinson's disease, motor neurone diseases, amyotrophic lateral sclerosis.
- Genetic conditions-Huntingtons chorea, Guiliain -Barre syndrome
- Others leading to dysarthria -Anoxic conditions, metabolic conditions, idiopathic conditions and neoplasm.

Unit 2 (10hours)

a. Assessment of dysarthria -Instrumental analysis
   - Physiological and electrophysiological methods.
   - Acoustics.
   - Advantages and disadvantages of instrumental analysis of speech in dysarthria

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b. Perceptual analysis -measures, standard tests and methods, speech intelligibility assessment scales, advantages and disadvantages of perceptual analysis of speech in dysarthria

c. Differential diagnosis of dysarthria from functional articulation disorders, apraxia of speech, aphasia and allied disorders

Unit 3 (5hours)

a. Management of dysarthria -medical, surgical and prosthetic approaches -speech therapy

- Vegetative exercises
- Oral sensorimotor facilitation techniques
- Compensatory approaches -correction of respiratory, phonatory. articulatory and prosodic errors
- Strategies to improve intelligibility of speech

Unit 4 (5hours)

a. Apraxia of speech in adults

- Definition of verbal and nonverbal apraxia of speech
- Different types, characteristics and classification
- Assessment of apraxia of speech-standard test and scales, subjective methods and protocols
- Management of apraxia of speech-different approaches
- Improving intelligibility of speech.

Unit 5 (5hours)

a. Alternate and augmentative communication systems for adult dysarthric and apraxic individuals. Classification of symbols, selection of systems, techniques for communication, assessment for AAC candidacy, choosing an appropriate system and technique, training communication partners, generalization of learning and effective use of AAC in adult dysarthrics and apraxics.

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DYSPHAGIA

a. Introduction to deglutition and its stages.
b. Definition and causes of dysphagia
c. Assessment
d. Management

OC 020: CHILD LANGUAGE DISORDERS

Unit 1 (15 hours)

a. Review of theories of language acquisition in children

- Biological maturation approaches
- Cognitive approaches
- Linguistic approaches
- Information processing theories
- Behaviour theory
- Pragmatic approaches

Unit 2 (15 hours)

a. Neurobiological correlates - neuroanatomial, neurophysioiogical and neurochemical aspects of language development

Unit 3 (15 hours)

a. Definition and causes, clinical types, Speech and language characteristics, associated problems, assessment and management of children with

- Mental retardation/syndromes related to child language disorders
- Autism and pervasive developmental disorders

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- Developmental dysphasia/specific language impairment
- Acquired dysphasia
- Learning disability
- Attention deficit hyperactivity disorders
- Acquired language disorders in children(Encephalitis,meningitis, childhood stroke,epilepsy,LKS

Unit 4 (15 hours)

a. Diagnosis of speech and language disorders in children: tests and protocols

- Differential diagnostic characteristics of children with language disorders various behavioural and linguistic tests and profiles
- Assessment procedures for normal and children with language disorders -medical, neurobehavioural, neurolinguistic measures.

Unit 5 (15 hours)

a. Approaches and techniques for management of speech and language disorders in children - cognitive linguistic, behavioural, medical methods of treatment -team work.

OC 030: APHASIA AND OTHER LANGUAGE DISORDERS

Unit 1 (15 hours)

a. Neurobiological aspects of language in adults

- Neuroanatomical, neurophysiological and neurochemical correlates for language function
- Neurolinguistic models and language processes -connectionists, hierarchical, global, process and computational models.

Unit2 (15 hours)

a. Historical aspects of aphasiology.

- Historical review and phases of aphasia and related adult language disorders
- Review of definitions and causes of aphasia; TBI, RHD, dementia, schizophasia and

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PPA

- Cortical and sub cortical aphasias, nature of language disorders in adults.

Unit 3 (15 hours)

a. Classification of language disorders in adults

- Need for classification
- Approaches to classification
- Various classification systems
- Characteristic features of the various types -speech, language and linguistic, behavioural and cognitive characteristics of adults with language disorders

Unit 4 (15 hours)

a. Assessment of adult language disorders

- Assessment of speech, language, linguistic and cognitive behaviour of adults with language disorders using various tests
- Linguistic investigations and implications in the assessment of adult language disorders
- Reflections on approaches to assessment in multilingual situation
- Theories of spontaneous recovery and prognostic indicators of adult language disorders.

Unit 5 (15 hours)

a. Intervention strategies for adult language disorders

- Principles of language intervention
- Techniques for intervention -medial, linguistic, behavioural and computational

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methods

- AAC
- Team approach in rehabilitation of adult language disorders
- Counselling and home management for adult language disorders.

OC 040: HEARING AIDS

Unit 1 (5 hours)

a. Historical development of hearing aids

b. Review of basic elements of hearing aids -microphone, amplifier, -receiver/vibrator, cords, batteries.

Unit 2 (7 hours)

a. Type of hearing aids - Part A

- Body level, ear level.
- Binaural, pseudo binaural, monaural
- Directional hearing aids, modular hearing aids
- Group amplification -hard wire, induction loop, FM, infrared
- Implantable hearing aids.
- Master hearing aids

Unit 3 (7 hours)

a. Types of hearing aids -Parts

- Routing of signals, head shadow/baffle/diffraction effects
- Output limiting: peak clipping, compression
- Extended low frequency amplification, frequency transposition

Unit4 (7 hours)

a. Mechano-acoustic couplers (Ear moulds)

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- Types
- Procedure
- Effect of acoustic couplers on the hearing aid output

Unit 5 (10 hours)

a. Electro-acoustic measurements for hearing aids

- Purpose, parameters, instrumentation, procedure, variables affecting EAM
- Electro-acoustic measurements, BIS, IEC and ANSI standards
- Environmental tests.

PART B: REHABILITATIVE TECHNOLOGY FOR HEARING IMPAIRED

Unit 1 (8 hours)

a. Recent advances in hearing aids

- Signal processing in hearing aids -BILL, TILL, PILL
- Programmable and digital hearing aids
- Signal enhancing technology

Unit 2 (7 hours)

a. Assistive 1istening devices -types and selection (Telephones, Television, typing technology etc)

Unit 3 (10 hours)

a. Hearing aid selection

- Pre-selection factors
- Prescriptive and comparative procedures
- Functional gain and insertion gain methods
- Use of impedance, OAEs and AEPs audiometry
- Hearing aids for conductive hearing loss

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- Hearing aids for children
- Hearing aids for elderly.
- Selection of non-linear programmable and digital hearing aids

Unit 4 (8 hours)

a. Cochlear implants- components, terminology, candidacy, advantages and complications,
b. Middle ear implants and brainstem implants.

Unit 5 (6 hours)

a. Care, maintenance and trouble shooting of hearing aids

b. Counselling and, orienting the hearing aid user (Patient and significant others)

OC050: PEDIATRIC AUDIOLOGY

Unit 1 (15 hours)

a. Need for identifying: mild hearing losses, conductive hearing losses, sloping hearing losses and fluctuating hearing losses

b. High risk register.

- Recommendations of the Joint Committee on infant screening
- Universal hearing screening vs high risk register
- High risk register usage in India

Unit 2 (15 hours)

a. Methods used to screen for conductive hearing losses and SN hearing losses

- Behavioural tests (awakening tests, bottle feeding test, behavioural observation audiometry, etc)

- Objective methods (Immittance audiometry, reflexometry, Crib-O-Gram, auditory

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cradle, accelerometer recording system, reflex inhibition audiometry, evoked response audiometry, otoacoustic emissions, etc)

Unit 3 (10 hours)

a. Development of human auditory system

b. Development of auditory behaviour -prenatal hearing, newborn hearing, auditory development from 0-1 year.

Unit 4 (20 hours)

a. Hearing testing in neonates and infants

- Behaviour observation audiometry
- Conditioning techniques:

- Visual reinforcement audiometry and its modifications including CORA
- PIWI and peep show audiometry
- TROCA
- Play audiometry
- Others

b. Modifications required while testing multiply handicapped children

Unit 5: (15 hours)

a. Speech audiometry in children.

- Modification required while carrying out speech audiometry in children
- Speech detection threshold, Speech recognition threshold

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- Speech recognition scores -PBK, WIPI, NU Chip, Early speech perception test, Ling's six sound tests, auditory number test, tests available in Indian languages

- BC speech audiometry.

OC 060: ENVIRONMENTAL AUDIOLOGY

Unit 1 (20 hours)

a. Noise in the environment and effects of noise: Definition of noise, sources -community, industrial, music, traffic and others, types -steady and non-steady

b. Auditory effects of noise exposure

- Historical aspects
- TTS and recovery patterns
- PTS
- Histopathological changes
- Effect of noise on communication, SIL, AI
- NOY, PNdB, PNL, EPNL,NC curves, NRR. SNR

c. Non-auditory effects of noise exposure

- Physiological/somatic and psychological responses, stress and health, sleep, audio-analgesia, effects on CNS and other senses

- Effects of noise on work efficiency and performance

Unit 2 (15 hours)

a. Audiometry in NIHL

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- Puretone audiometry.

    - Base line and periodic monitoring tests, high frequency audiometry, brief tone audiometry correction for presbycusis
    - Instrumentation: Manual audiometer, automatic audiometer
    - Testing environment
    - High frequency audiometry

- Speech audiometry
    - Speech discrimination tests with and without the presence of noise
    - Filtered speech tests and time compressed speech tests

- Other audiological evaluations: Impedance audiometry, ERA, OAE, Tests for susceptibility

Unit3 (10 hours)

a. Noise and vibration measurement - Instrumentation and procedure for indoor and outdoor measurement of ambient noise, traffic noise, aircraft noise, community noise and industrial noise

Unit4 (15 hours)

a. Hearing conservation

- Need for hearing conservation program, steps in hearing conservation program, ear protective device (EPDs)

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- Types: ear plugs, ear muffs, helmets, special hearing protectors, merits and demerits of each
- Properties of EPDs: attenuation, comfort, durability, stability, temperature, tolerance
- Evaluation of attenuation characteristics of EPDs
- Toughening

Unit 5 (15 hours)

a. Legislations related to noise

- DRC-definition, historical aspects, use of TTS and PTS, information in establishing DRC, CHABA, AFR 160-3, AAOO, ASA-Z 24.5, damage risk contours, Walsh-Healey Act, OSHA, EPA, Indian noise standards

- Claims for hearing loss: Fletcher point eight formula, AMA method, AAOO formula, California variation in laws, factors in claim evaluation, variations in laws and regulations, date of injury, evaluation of hearing loss, number of tests

- Indian acts/regulations, American acts.

OC 070: SCIENTIFIC ENQUIRY IN SPEECH AND HEARING

Unit 1 (5 hours)

Scientific status of speech-language pathology and audiology

- Speech language pathology and audiology as behavioural sciences

- Need for scientific enquiry in speech-language pathology and audiology

- Choosing a research problem, formulation of research question, statement of research

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question, formulation of hypothesis, types of hypothesis.

Unit 2 (10 hours)

a. Parameters for scientific research in speech-language pathology and audiology

- Identification of variables and the types
- Types of data and its nature
- Measurement procedures in speech-language pathology and audiology
- Instrumental and behavioural measures and recording procedures

Unit 3 (10hours)

a. Research methods and designs

- Types of research in speech-language pathology and audiology and their application to clinical population and community research

- Research designs for speech-language pathology and audiology, discussion of hypothetical research problem, assessment and evaluation of feasibility of application of various research designs for speech-language pathology and audiology

Unit 4 (7 hours)

a. Behavioural statistics

- Basic statistical procedures for behavioural research
- Application with hypothetical illustrations

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Unit 5 (6 hours)

a. Documentation of research

- Reporting research -organization, analysis and presentation of data
- Components of research article, report writing style
- Ethics of research in behavioural sciences
- Qualities of a researcher/scientific clinician.

PART B: ORGANIZATIONS AND ADMINISTRATION OF SPEECH AND HEARING CENTRES

Unit 1 (6 hours)

a. Rehabilitation of the speech and hearing handicapped

- Need for rehabilitation and hearing conservation
- Functions of speech and hearing centers in different set-ups
- Private practice, evaluation based practice
- Government organizations, NGOs
- Community based rehabilitation
- Role of itinerant speech therapist, anganwadis, resource teachers etc.

Unit 2 (10 hours)

a. Public laws and codes

- Code of ethics
- Rehabilitation Council of India , Disability related Acts
- Consumer protection Act, noise pollution Act and other public laws
- Facilities and concessions available for speech and hearing disabled

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Unit 3 (6 hours)

a. Organization of speech and hearing centers

- Setting up a speech and hearing center.
- Organization of space, time and personnel
- Recruiting personnel- rules, salary etc.

Unit4 (10 hours)

a. Administrative procedures

- Budget, financial management and other issues
- Records and record keeping -different types
- Purchase formalities
- Leave rules and other benefits

Unit 5 (5 hours)

a. Public education and marketing services

- Organizing camps, screening programs, seminars, workshops etc
- Marketing professional skills
- Ethical standards
- Public education methods

CLINICAL PRACTICALS

1.1: INTRODUCTION TO SPEECH AND LANGUAGE PATHOLOGY

Unit 1:

1. Reading practical work book

2. Demonstration of different types of wave forms -quasi-periodic, quasi-random, burst and Silence

3. Listening to cassettes:

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(a) How they hear (b) Stress, rhythm and intonation (c) Cardinal vowels

(d) IPA transcription (e) Different speech disorders (f) Speech development

4. Measurement of the following in 5 normal subjects: (a) Habitual frequency (b) Frequency range (c) Optimum frequency (d) Intensity (e) Intensity range (f) Rise time (g) Fall time (h) Vital capacity (i) Mean air flow rate G) Phonation duration

5. Recording normal speech samples

6. Counting syllables in a standard passage

7. Production of various speech sounds and their identification

8. Listening to different pitch and their identification

9. Submission of practical records

Unit 2:

1. Oral mechanism examination on 5 normal children and 5 normal adults

2. Oral mechanism examination on 2 children with structural oral deficits and 2 adults with structural or neurogenic disorders

3. Perceptual analysis of speech and language parameters in 2 normal children and 2 normal adults

4. Perceptual analysis of speech and language parameters in any two disorders each in children and adults

5. Analysis of speech and 1anguage behaviour of population from diverse cultural background

6. Observation of diagnostics procedures

7. Report on the available clinical facilities and clinical activities of the institute

8. Prepare a chart and show the developmental stages for speech and language behaviour

9. Report on the available audiovisual material in the speech pathology laboratory and therapy clinic

SPEECH DIAGNOSTICS AND THERAPEUTICS

1. Observe the evaluation process of at least 5 different speech and language disorders in children

2. Observe the evaluation process of at least 5 different speech and language disorders in

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adults

3. Administer anyone standardized test on a child and adult with any speech and language disorder

4. Administration of standardized tests for assessment of delayed speech and language development such as REEL, SECS, 3DLAT, PPVT

5. Study the available normative data (Indian/Western) of speech such as respiratory, phonatory, resonatory and articulatory parameters

6. Study the available normative data (Indian/Western) of language such as phonology, semantics, and syntax, morphology and pragmatic measures.

7. Observation of various therapeutic methods carried out with children and adults with speech and language disorders

8. Familiarize with the sources for referral and parent counseling procedures

9. Preparation of a model diagnostic report of a patient with speech and language disorders

10. Preparation of a model diagnostic report of a patient with speech and language disorders

11. Preparation of a therapy kit

12. Submission of record.

1.2: INTRODUCTJON TO AUDIOLOGY

1. Development case history forms for adults and children

2. Take case history for 5 adults

3. Take case history for 5 children

4. Find out pathological condition based on case history for 10 adults

5. Plot audiogram for 10 cases

6. Administer audiometric version of Weber and Bing test on 5 normal hearing persons

AUDIOLOGICAL EVALUATION

1. Take audiograms for 10 normal hearing persons.

2. Find out bone conduction threshold on forehead/mastoid placement on 10 normal hearing persons

3. Find out SRT, SDT & SIS through headphone and bone conduction on 10 normal hearing persons

4. Find out MCL, UCL and dynamic range for 10 normal hearing persons

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5. Administer puretone and speech audiometry on patients

6. Carryout masking for AC, BC and speech audiometry whenever indicated.

2.1: PHONOLOGIAL DISORDERS

Unit 1:

1. Perceptual analysis of normal articulation in five subjects

2. Administration of articulation tests to five subjects

3. Measurement of speech intelligibility in five subjects

4. Measurement of oral sensory perception in five subjects

5. Measurement of nasality in five subjects.

6. Measurements of resonance in twin tubes

7. Measurement of auditory discrimination

8. Visualization of glottal spectra, oral tract resonance and speech spectra for /a/, /i/, /u/

9. Submission of practical record

Unit 2:

1. Evaluation of two clients with phonological disorder

2. Use appropriate instruments for diagnosis and rehabilitation of phonological disorders

3. Use of software for evaluation

4. Preparation of an audiocassette or public education pamphlet

5. Pattern analysis of speech sample of a client with phonological disorder

6. Counseling the client/parent with phonological disorder

7. Administration of articulation test on one normal and one disordered client with phonological disorders

8. Submission of records

MAXILLOFACIAL ANOMALIES AND LARYNGECTOMY

1. Administration of diagnostic tests for cleft palate, glossectomy, mandibulectomy

2. Submission of a report on a client with cleft palate/glossectomy or mandibulectomy using the available performae and tests

3. Perceptual analysis of speech of one client each with cleft lip and palate, glossectomy and mandibulectomy

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4. Submission of a report on a client with cleft palate/glossectomy/ mandibulectomy on therapy techniques used

5. Submission of record

2.2: FLUENCY AND ITS DISORDERS

Unit 1:

1. Analysis of fluency in one normal speech sample-child & adult percentage of individual/total disfluency

2. Rating intelligibility in five speech samples

3. Measurement of rate of speech- perceptual and instrumental in five speech samples.

4. Perceptual and instrumental analysis of intonation, rhythm and stress in five speech samples

5. Listening to tests of intonation, rhythm and stress

6. Submission of practical record.

Unit 2:

1. Analysis of disfluency of one client fluency disorders.

2. Perceptual analysis of 5 speech samples of fluency disorders

3. Instrumental analysis of 5 speech samples of fluency disorders

4. Perceptual and instrumental analysis of intonation, rhythm and stress of 5 clients with fluency disorders

5. Submission of therapy report of 2 clients with fluency disorders

6. Counselling of 2 clients with fluency disorders

7. Transcription and analysis of speech sample of a case with fluency disorder using IPA

8. Preparation of audiocassette and public education pamphlet on fluency disorder

9. Assessment of a client with fluency disorder on standard test for fluency assessment (SSI.SPI)

2.3: VOICE AND ITS DISORDERS

Unit 1:

1. Reading practical workbook

2. Perceptual analysis of five voices

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3. Instrumental analysis of five normal voice for the following parameters: (a) Frequency and related parameters (b) Intensity and related parameters (c) Spectra (d) Electroglotography (e) Software for measuring various dimensions of voice, quality of voice (f) Recording of voice samples (g) Measurements (special) in musicians -pitch using pitch pipe, musical range.

Unit 2:

1. Perceptual analysis of 5 abnormal voices

2. Instrumental analysis of 5 abnormal voices

3. Submission of a report on diagnosis for 5 clients with voice disorders 4: Submission of a report on therapy for 5 clients with voice disorders

5. Submission of audiocassette and public education pamphlet on voice disorders

6. Transcription and analysis of speech sample of a client with voice disorder

7. Counseling a client with voice disorder

8. Submission of records

LARYNGECTOMY:

1. Administration of diagnostic tests for laryngectomy

Perceptual analysis of speech samples of TEP, esophageal and artificial larynx.

2. Insertion and use of different types of TEP prosthesis in a model.

3. Submission of record

2.4**: DIAGNOSTICS AUDIOLOGY: BEHAVIOURAL TESTS**

1. Administer tests to differentiate between cochlear and retro-cochlear pathology and interpret results.

2. Administer puretone and speech tests to detect pseudo-hypacusis

3. Administer puretone and speech tests to detect central auditory processing disorders

4. Interpretation of results of different audiological tests

DIAGNOSTIC AUDIOLOGY: PHYSIOLOGICAL TESTS

1. Carryout immittance evaluation on 10 normal hearing persons

2. Observation of immittance evaluation carried out on patients

3. Observation of recording of AEPs and OAEs

2.5: EDUCATIONAL AUDIOLOGY

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1. Role-playing activities for teaching language to the hearing impaired

2. Prepare schedules for educational placement of 5 hearing impaired children having different hearing capacities

3. Counselling parents regarding education of the hearing impaired.

REHABILITATIVE AUDIOLOGY

1. Role-playing activities for speech reading, communication strategies and auditory learning
2. Compile activities on management of deaf-blind children
3. Compile activities on management of children with central auditory processing disorders

3.1: MOTOR SPEECH DISORDERS AND DYSPHAGIA IN CHILDREN.

1. Perceptual analysis of speech of any two clients with motor speech disorders
2. Instrumental analysis of speech of any two clients with motor speech disorders

3. Preparation of audiocassette and public education pamphlet on motor speech disorders in children

4. Transcription & analysis of phonological processes in motor speech disorders in children using IPA

5. Counselling a client/parent with motor speech disorder
6. Submission of record

DYSARTHRIA AND APRAXIA

1. Assess any two clients with dysarthria and apraxia
2. Perceptual analysis of speech of anyone client with dysarthria/apraxia
3. Instrumental analysis of speech of anyone client with dysarthria/apraxia

4. Submission of audiocassette of public education pamphlet on anyone aspect of dysarthria or apraxia

5. Transcription and analysis of speech sample of a client with dysarthria or apraxia using IPA
6. Counselling a client with dysarthria or apraxia
7. Submission of records

3.2: CHILD LANGUAGE DISORDERS

1. Evaluate 2 normal children and 2 children with language disorders

2. Record language samples of 2 children with language disorders

3. Transcription of language samples of children with language disorders

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4. Provide therapy for 2 children with language disorders

5. Counselling parents of 3 children with language disorders

6. Submission of an audiocassette on any aspect of evaluation/therapy with a child language disorder

7. Submission of records

3.3: APHASIA AND OTHER LANGUAGE DISORDERS

1. Administer available tests for aphasia and related disorders
2. Submit report on assessment and evaluation of a client with aphasia and related disorders
3. Submit report on therapeutic intervention of a client with aphasia and related disorders

4. Transcription and analysis of speech samples of any two clients with aphasia and related language disorders

5. Submission of an audiocassette or public education pamphlet on aphasia or related language disorders.

6. Counselling a client/family member about the disorder
7. Submission of records

3.4: HEARING AIDS

1. Prepare a record of physical features of different types of hearing aids
2. Preparation of different types of ear moulds.
3. Carryout electro acoustic measurements of various types of hearing aid.

REHABILITATIVE TECHNOLOGY FOR HEARING IMPAIRED

1. Hearing aid selection using functional and insertion gain measurements
2. Test patients with different ALDs
3. Familiarization with programmable and digital hearing aids
4. Troubleshooting of hearing aids
5. Demonstration and counselling of hearing aid use to patients
6. Compile information on cochlear implants regarding candidacy, cost, places where it is done and rehabilitation of cases.

3.5: PEDIATRIC AUDIOLOGY

1. Administer high-risk register to medical/non-medical professionals
2. Preparation of different types of ear moulds.
3. Carryout electro-acoustic measurements of various types of hearing aids.

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3.6: ENVIRONMENTAL AUDIOLOGY

1. Measurement of noise in the environment using different instruments
2. Measurement of ambient noise levels in the audiometric rooms
3. Administer puretone and speech audiometry to industrial worker
4 Counselling industrial workers regarding hearing conservation

3.7: SCIENTIFIC ENQUIRY IN SPEECH AND HEARING

1. Propose at least two research questions based on their clinical experience-(a) Identify. Variables in the above research questions (b) Propose suitable research designs for the above (c) Suggest appropriate statistical methods for the above (d) Organize and report hypothetical study of anyone of the above.

2. Critically evaluate one of the research articles from journal
3. Use computer statistical methodologies
4. Submission of records.

ORGANIZATION AND ADMINISTRATION OF SPEECH AND HEARING CENTERS

1. Preparation of administrative structure of at least two premier government organizations

2. Listing of government, non-government and private step-ups in the vicinity of their training center

3. Welfare measures available for the disabled in the country, the rules and regulations of Rehabilitation Council of India, ethical issues in the clinical practice.

4. Propose action plan for a minimum of three activities for public education.

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OC 060: ENVIRONMENTAL AUDIOLOGY

Chasin, M (1996). Musicians and prevention of hearing loss. San Diego: Singular Publishing Group Inc.

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OC 070: SCIENTIFIC ENQUIRY IN SPEECH AND HEARING

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2.11 No: of hours per subject

As given under clause " Content of each subject in each year "

2.12 Practical training

As given under clause " Content of each subject in each year "

2.13 Records

To be maintained for all Practical Workand duly signed by the supervising teacher should be submitted at the time of University practical examination

2.14 Dissertation:

Not Applicable

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2.15 Speciality training if any

Not Applicable

2.16 Project work to be done if any

Not Applicable

2.17 Any other requirements [CME, Paper Publishing etc.]

Not Applicable

2.18 Prescribed/recommended textbooks for each subject

As given under clause "Content of Subject in each year"

2.19 Reference books

See clause no 2.10

2.20 Journals

List of journals for reference in subjects related to audiology and speech language pathology

1. JASA (Journal of the Acoustical Society of America)
2. Ear and Hearing
3. Trends in Amplification
4. American Journal of Audiology
5. American journal of speech language pathology
6. Language speech and hearing sciences in schools
7. Journal of Speech and Hearing Research
8. Seminars in Hearing
9. Journal of American Academy of Audiology
10. International journal of speech language pathology
11. Journal of voice
12. Journal of communication disorders
13. Journal of child language

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2.21 Logbook

To be maintained for all academic work which shall be counter signed by concerned HOD

3 EXAMINATIONS

3.1 Eligibility to appear for exams

Attendance and condonation

Each candidate should put in minimum 80% of attendance in theory and clinical practicum for appearing university examination. Condonation of 10% in the attendance once in the entire course period can be granted by the Head of the Institution and the same may be communicated to the university.

Internal assessment

Theory: It shall be based on periodical assessment, evaluation of student assignment, class presentation etc. Regular examination should be conducted throughout the course. Weightage for internal assessment shall be 20% of the total marks in each subject. There shall be three examinations and the last one is University model examination and mandatory. Average of best of two marks will be taken as 50% of the internal assessment. The remaining 50% of the internal assessment will be based on day to day assessment.

Clinical Practicum: The internal assessment for clinical practicum shall be made by thefaculty of concerned departments based on the clinical skills in assessment, remediation, clinical case presentation and clinical viva. The weightage of internal assessment for clinical practicum shall be 50 % of the total marks.

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The candidate must secure a minimum of 50% marks for internal assessment in a particular subject in order to be eligible to appear in the university examination of the subject.

The class average of internal assessment marks of the whole class should not exceed 75% of maximum marks for regular examination and 80% for supplementary examination both in theory and clinical practicum.

3.2 Schedule of Regular/Supplementary exams

Regular university examinations will be conducted at the end of each academic year and supplementary examinations will be conducted within six months after the publication of the result of regular examination.

3.3 Scheme of examination showing maximum marks and minimum marks

Theory Examination**:** There shall be a university examination at the end of each academic year. Duration of each theory paper shall be for 3hours.

Clinical Practicum Examination: There shall be a Clinical Practicum Examination separately for Speech Language Pathology and Audiology which will be conducted by an internal and external examiner for 50 marks.

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Syllabus and scheme of examination

A) Scheme of curriculum for first year

CODES/ PAPER NO.	PAPER TITLE	TEACHING HOURS (MINIMUM)	EXAM DURATION	EXAM MARKS		IA MARKS		TOTAL MARKS
				maximum	Minimum	maximum	minimum	
OA 010	Introduction to Speech Language Pathology and Speech Diagnostics and Therapeutics	75	3	80	40	20	10	100
OA 020	Introduction to Audiology and Audiological Evaluation.	75	3	80	40	20	10	100
OA 030	Anatomy, physiology and pathology of speech and hearing systems	75	3	80	40	20	10	100
OA 040	Biomedical instrumentation and acoustics	75	3	80	40	20	10	100
OA 050	Linguistics phonetics and language sciences	75	3	80	40	20	10	100
OA 060	Psychology related to speech and hearing	75	3	80	40	20	10	100

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OA 070	Genetics, Neurology and Paediatrics	75	3	80	40	20	10	100
OA 080	Clinical practicum Speech language pathology	300		50	25	50	25	100
0A 090	Clinical practicum Audiology	300		50	25	50	25	100
Total								**900**

B) Scheme of curriculum for second year

CODES/ PAPER NO.	PAPER TITLE	TEACHING HOURS (MINIMUM)	EXAM DURATION	EXAM MARKS		IA MARKS		TOTAL MARKS
				maximum	Minimum	maximum	minimum	
OB 010	Normal and abnormal aspects of articulation	75	3	80	40	20	10	100
OB 020	Fluency and its disorders	75	3	80	40	20	10	100
OB 030	Normal and abnormal aspects of voice	75	3	80	40	20	10	100

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OB 040	Diagnostics audiology	75	3	80	40	20	10	100
OB 050	Educational audiology and rehabilitative audiology	75	3	80	40	20	10	100
OB 060	Otolaryngology	75	3	80	40	20	10	100
OB 070	Statistics and research methods & epidemiology related to speech and hearing	75	3	80	40	20	10	100
OB 080	Clinical practicum Speech language pathology	300		50	25	50	25	100
0B 090	Clinical practicum Audiology	300		50	25	50	25	100
Total								900

C) Scheme of curriculum for third year

CODES/ PAPER NO.	PAPER TITLE	TEACHING HOURS (MINIMUM)	EXAM DURATION	EXAM MARKS		IA MARKS		TOTAL MARKS
				maximum	Minimum	maximum	minimum	
OC 010	Motor speech disorders and dysphagia	75	3	80	40	20		100

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							10	
OC 020	Child language disorders	75	3	80	40	20	10	100
OC 030	Aphasia and other language disorders	75	3	80	40	20	10	100
OC 040	Hearing aids	75	3	80	40	20	10	100
OC 050	Paediatric audiology	75	3	80	40	20	10	100
OC 060	Environmental audiology	75	3	80	40	20	10	100
OC 070	Scientific enquiry in speech and hearing and organization and administration of speech and hearing centers	75	3	80	40	20	10	100
OC 080	Clinical practicum Speech language pathology	300		50	25	50	25	100
0C 090	Clinical practicum Audiology	300		50	25	50	25	100
Total								900

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3.4 Papers in each year:

As given under "Content of subject in each year "

3.5 Details of theory exams

Question paper setting / pattern

Maximum mark for each theory paper shall be 80 and the pattern of questions is

Four essay	-10 marks each
Five short notes	-5 marks each
Five answer briefly	-3 marks each

The candidate should answer all the questions.

Question paper setters shall be appointed from inside and/or outside the State.

Scrutiny of Question papers shall be done by the subject experts in respective faculties

Scheme of valuation

The valuation will be conducted as per KUHS rules and regulations.

3.6 Model question paper for each subject with question paper pattern

Q.P Code: **Reg. No: .....**

SECOND YEAR BASLP EXAMINATIONS

(Model Question)

NORMAL AND ABNORMAL ASPECTS OF ARTICULATION

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

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1. Describe the theories of phonological development.

2. Explain about the linguistic approaches to articulation therapy.

3. Explain the associated problems seen in childrenwith cleft lip and palate.

4. Explain VPI and its classification. Mention the causes for VPI.

Short notes: (5x5=25)

5. Speech characteristics of glossectomy

6. Prosthesis used in cleft palate

7. Y strip classification

8. Phonological processes

9. Classification of sounds based on place of articulation

Answer briefly: (5x3=15)

10. Articulatory errors seen in hearing impaired

11. EPG

12. MIDVAS

13. Mandibulectomy

14. Secondary articulation

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Q.P Code: **Reg. No: .....**

SECOND YEAR BASLP EXAMINATIONS

(Model Question)

FLUENCY AND ITS DISORDERS

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1. Describe the development of fluency.

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2. Explain briefly about the theories of stuttering.

3. Describe the therapy techniques for stuttering

4. What is cluttering. Explain about the characteristics of cluttering

Short notes: (5x5=25)

5. Neurogenic stuttering

6. Differential diagnosis of stuttering from NNF

7. FIG

8. Therapy techniques for cluttering

9. SSI

Answer briefly: (5x3=15)

10. Adaptation effect

11. Rhythm

12. Rationale behind DAF

13. Secondary behavior

14. MIDVAS

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Q.P Code: **Reg. No: .....**

SECOND YEAR BASLP EXAMINATIONS

(Model Question)

NORMAL AND ABNORMAL ASPECTS OF VOICE

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1. Describe the development of voice

2. Describe organic voice disorder

3. Describe the pre-operative counseling for larynectomy

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4. Describe the therapy techniques for hyper functional voice disorders

Short notes: (5x5=25)

5. Vocal fold paralysis
6. Acoustic characteristics of normal voice
7. Speech characteristics in esophageal speech
8. Theories of phonation
9. Aerodynamic assessment of voice

Answer briefly: (5x3=15)

10. Diplophonia
11. Contact ulcer
12. Vocal fold
13. Voice problems in hearing impaired
14. Hyper nasality

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Q.P Code: **Reg. No: .....**

SECOND YEAR BASLP EXAMINATIONS

(Model Question)

DISGNOSTIC AUDIOLOGY

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1. Explain the basis and classification of AEPs
2. What are the clinical applications of OAE.
3. Explain acoustic reflex arc
4. Discuss the tests in clinical use to identify CAPD

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Short notes: (5x5=25)

5. PIPB function

6. Test battery approach in audiology

7. Clinical applications of ABR

8. Behavioural indications of functional hearing loss

9. Subtlety and bottle neck principle

Answer briefly: (5x3=15)

10. LLR

11. B type tympanogram

12. Stenger principle

13. Reflex decay

14. Binaural fusion test

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Q.P Code: **Reg. No: .....**

SECOND YEAR BASLP EXAMINATIONS

(Model Question)

EDUCATIONAL AUDIOLOGY AND REHABILITATIVE AUDIOLOGY

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1. Explain about the educational placement options for hearing impaired children.

2. Explain the factors affecting speech reading.

3. What is auditory training. Explain about the steps in auditory training.

4. Explain about the classroom modifications for children with hearing impaired.

Short notes: (5x5=25)

5. Structured methods for language teaching in children with hearing impaired

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6. Two tests for speech reading ability

7. Multi sensory approach

8. Jena method

9. ASL

Answer briefly: (5x3=15)

10. Goals of aural rehabilitation

11. Cued speech

12. Group auditory training

13. Helen test

14. SEE I

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Q.P Code: **Reg. No: .....**

SECOND YEAR BASLP EXAMINATIONS

(Model Question)

OTOLARYNGOLOGY

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1. Explain about the diseases causing conductive hearing loss

2. Explain about vocal fold paralysis

3. Describe the structural abnormalities of articulatory system

4. Decribe the congenital malformations of the ear

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Short notes: **(**5x5=25)

5. Laryngeal web

6. Acoustic neuroma

7. Neoplasm of esophagus

8. Laryngitis

9. Otitis media

Answer briefly: (5x3=15)

10. Otitis externa

11. Glue ear

12. Ankyloglossia

13. Pharyngitis

14. Adenoiditis

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Q**.P Code:** **Reg. No: .....**

SECOND YEAR BASLP EXAMINATIONS

(Model Question)

STATISTICS AND RESEARCH METHODS AND EPIDEMIOLOGY IN

SPEECH AND HEARING

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1. Describe about the measures of central tendency.Calculate the measures of central tendency on the following data

20 21 25 28 26 29 21 26 20 24

2. Describe about product moment correlation

3. Describe about the epidemiologic methods of datacollection

4. Explain about research designs

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Short notes: (5x5=25)

5. Writing style of a research report

6. High risk register

7. Sampling error

8. Scales of measurement

9. Skweness

Answer briefly: (5x3=15)

10. Descriptive statistics

11. Histogram

12. Prevalence of hearing loss

13. Hypothesis

14. Kurtosis

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Q.P Code: **Reg. No: .....**

THIRD YEAR BASLP EXAMINATIONS

(Model Question)

MOTOR SPEECH DISORDERS

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1.Explain the direct and indirect pathway of the nervous system with a neat labeled diagram.

2.Define cerebral palsy. Explain the physiological classification system of cerebral palsy.

3.Define DAS. Discuss about its assessment and management procedures.

4.Discuss various types of AAC. What all factors would you consider while prescribing an AAC for progressive dysarthria.

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Short notes: (5x5=25)

5.Cranial nerves involved in speech production.

6.RIP.

7.Hyperkinetic dysarthria.

8.Assosiated problems of cerebral palsy.

9.GuillianBarre syndrome.

Answer briefly: (5x3=15)

10.FDA

11.Basal ganglia circuit.

12.Multiple sclerosis

13.Ideational and Ideomotor apraxia.

14.Respiratory patterns in different types of cerebral palsy.

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Q.P Code: **Reg. No: .....**

THIRDYEAR BASLP EXAMINATIONS

(Model Question)

CHILD LANGUAGE DISORDERS

Time: 3hrs

Max marks: 80

•Answer all questions

•Draw diagrams wherever necessary

Essays: (4x10=40)

1.Critically evaluate the linguistic theory and biological theory of childhood language acquisition.

2.Comment about the neuro anatomical correlates of language

3.Define PDD, and elaborate on the speech and language characteristics of children with autism

4.Management of children with learning disability involves a team approach. Justify.

Short notes (5x5=25)

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5.Differential diagnosis of SLI

6.ABCCP

7.Delayedvs Deviant language acquisition

8.Information processing theory

9.Childhood aphasia

Answer briefly: (5x3=15)

10.Extension

11.Neurotransmitters

12.Classification of mental retardation

13.LOVAS therapy

14.Counseling in communication disorders

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3.7 Internal assessment component

Theory: It shall be based on periodical assessment, evaluation of student assignment,class presentation etc. Regular examination should be conducted throughout the course. Weightage for internal assessment shall be 20% of the total marks in each subject. There shall be 2 examinations and average will be taken as 50% of the internal assessment. The remaining 50% of the internal assessment will be based on day to day assessment.

Clinical Practicum: The internal assessment for clinical practicum shall be made by thefaculty of concerned departments based on the clinical skills in assessment, remediation, clinical case presentation and clinical viva. The weightage of internal assessment for clinical practicum shall be 50 % of the total marks.

The candidate must secure a minimum of 50% marks for internal assessment in a particular subject in order to be eligible to appear in the university examination of the subject.

The class average of internal assessment marks of the whole class should not exceed 75% (regular examination) and 80% (supplementary examination), both in theory and clinical practicum.

- There shall be a minimum of 3 sessional internal assessment examinations shall be conducted during a academic year of which the final one is University modal examination and is mandatory.

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- The average marks of the best two examinations shall be taken as mark for internal assessment.

No improvement for internal examination.

3.8 Details of practical/clinical practicum exams

As given under "Content of subject in each year "

3.9 Number of examiners needed (Internal & External) and their qualifications

To become external/ internal examiner a teacher should poses a minimum of 3 years of Post PG teaching experience in the concerned subject.

3.10 Details of viva: division of marks

As given under "Content of subject in each year "

4 INTERNSHIP

4.1 Eligibility for internship

Students will be eligible to do internship only after passing all the theory papers and clinical practicum.

4.2 Details of internship Training

Duration: The duration of internship will be for one academic year (10 months).

Internship posting: During the internship year the candidates should do 5 months of internship in an external institute (approved by KUHS) and the remaining 5 months in the parent institute.

Maintenance of records by students: Every student should maintain records of the number of hours of clinical work in different areas and institutions. This should be certified by the head of the institution or his/her nominee where the student is undergoing internship. The students should get the appraisal form duly filled by the

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supervisors in the respective institutions where they are undergoing internship and should be submitted to the parent institution in order to obtain internship completion certificate from the parent institutes.

4.3 Model of Internship Mark lists

Internship completion certificate: The student has to obtain internship completion certificate from the parent institute to apply for a degree certificate

4.4 Details of Training given

Duration: The duration of internship will be for one academic year (10 months).

Internship posting: During the internship year the candidates should do 5 months of internship in an external institute (approved by KUHS) and the remaining 5 months in the parent institute.

Maintenance of records by students: Every student should maintain records of the number of hours of clinical work in different areas and institutions. This should be certified by the head of the institution or his/her nominee where the student is undergoing internship. The students should get the appraisal form duly filled by the supervisors in the respective institutions where they are undergoing internship and should be submitted to the parent institution in order to obtain internship completion certificate from the parent institutes.

5. ANNEXURES

5.1 Check Lists for Monitoring: Log Book, Seminar Assessment etc. to be formulated by the curriculum committee of the concerned Institution

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