

UNIVERSITY OF MYSORE
REGULATIONS AND SYLLABUS

**BACHELOR OF AUDIOLOGY AND SPEECH-LANGUAGE
PATHOLOGY
(B.ASLP)**

SYLLABUS – 2016

Ref. No.AC.2(S)/384/14-15 dated 01.06.2016

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DIRECTOR



**ALL INDIA INSTITUTE OF SPEECH AND
HEARING**
MANASAGANGOTTHRI
MYSORE 570 006



**INTEGRATED SEMESTER BACHELOR OF AUDIOLOGY AND SPEECH-
LANGUAGE PATHOLOGY
REGULATIONS - 2016**

01.0 Programme offered and duration of the Programme:

Bachelor of Audiology and Speech-Language Pathology/B.ASLP - 8 Semesters
(including 1 year Internship)

Note : Each semester shall extend over a minimum period of eighteen weeks
excluding examination days.

02.0 Eligibility for admission

02.1 The Eligibility for Admission is as given in Annexure - I

03.0 Scheme of Instruction

03.1 Bachelor of Audiology and Speech-Language Pathology/ B.ASLP

a) In each semester there shall be six courses. In all, there shall be 20 core courses, 8 allied courses, 2 general studies and 6 clinicals. 4th year shall constitute the internship year.

Note:

i) Core means the theory subjects leading to the profession of Speech and Hearing
ii) Clinical practice means the clinical practicum leading to the practice of profession of Speech and Hearing.

iii) Allied course means the course which supplements the core subjects.

b) The syllabus of every course shall, as far as possible, be divided into FIVE units.

c) Hours of instruction (contact hours) per week.

i) Theory: A minimum of 3 hours per course per week. Total 15 hours to 20 hours per week for all courses.

ii) Clinical practicum: 10-15 hours per week.

Subjects of study with course titles are as given in Annexure – II

4.0 Attendance

4.1 Each semester shall be taken as a unit for purpose of calculating attendance and a candidate shall be considered to have put in the required attendance for the semester, if he/she has attended not less than 80% in case of theory classes and 90% in clinical postings during each semester.

4.2 A candidate who is having shortage of attendance in clinical practicum is permitted to make up this shortage by attending clinical work during vacation immediately after that semester, before commencement of the next semester. In case of B.ASLP the candidates are permitted to avail this facility in I, III and V semesters only, with prior permission of the Head of the Institution.

4.3 If a candidate represents his/her Institution/ University/ Karnataka State/ Nation in Sports/NCC/NSS/Extension programmes or any official activities, he/she is permitted to avail a maximum of 30 days in an academic year, based on the recommendation and prior permission of the Head of the Institution.

4.4 A candidate who does not satisfy the requirement of attendance shall not be eligible to take examination of the concerned semester, nor is eligible to get admission to the next semester.

- 4.5 A candidate who fails to satisfy the requirement of attendance in a semester may repeat that semester when offered in the immediate subsequent year. (This facility shall be available only for **two** times in case of B.ASLP in the entire course.

5.0 Medium of Instruction

The medium of instruction shall be English. A candidate shall write the examination in English.

6.0 Subjects of Study

- 6.1 Courses of study shall be as those shown in the scheme of examination Annexure – II
- 6.2 VII and VIII semesters taken together shall constitute the **internship year** during which time the candidates may be posted in any speech and hearing or related Institution in India. The candidates shall abide by the Internship Programme Rules framed by the institution from time to time.

7.0 Change of Subject

- 7.1 Once chosen, change of course is not permissible under any circumstances during that or subsequent semesters.

8.0 Appearance for the Examination

A candidate shall apply for all the courses of a semester when he/she appears for the examination of that semester for the first time immediately after the completion of that semester.

9.0 Scheme of Examination

- 9.1 There shall be a University examination at the end of each semester.
- 9.2 Detailed scheme of examination along with course titles and marks break-up course-wise is as given in **Annexure – II**.
- 9.3 Duration of examination per theory course of 50 marks shall be for 2 hours.
- 9.4 Every theory course shall comprise of FIVE questions with internal choice covering the entire syllabus.
- 9.5 For a theory course carrying 50 marks, each full question shall carry 10 marks with internal division like 8+2, 6+4, 5+5, 5+3+2 and so on. Maximum number of subdivisions shall be THREE. Model Question paper is as given in Annexure III

9.6 Clinicals:

- i) Clinical practicum examination in core subjects shall be a combined examination by an external and an internal examiner for 50 marks in case of B.ASLP Internal assessment, for 25 marks, shall be given by the faculty of the concerned department.
- ii) The examiners in the clinical practicum examination shall assess candidates clinical skills in assessment, diagnostics, therapeutic plan, presentation and clinical knowledge. In case of B.ASLP each candidate shall be assigned one or more cases for this purpose by the heads of the concerned department, with prior approval the Head of the Institution.

A – Clinical internal (Speech-Language Pathology and Audiology) at the end of odd and even semesters for 75 marks in first to fifth semesters

B – Clinical external (Speech-Language Pathology and Audiology) at the end of sixth and eighth semesters for 75 marks. The examination shall be conducted by the examiners from the field of SLP and Audiology

9.7 Equal opportunities for PWDs shall be provided as per PWD Act

10.0 Question paper setting, Valuation, etc.

10.1 Question paper setting

- (i) There shall be a Board of Examiners for preparing, scrutinizing and approving the question papers and scheme of valuation for the use at the next examination/s.
- (ii) The question papers shall be drawn from the question bank, through a computer.

10.2 Coding of Answer Scripts

Before valuation the answer scripts shall be coded using false numbers, for each paper code separate false number shall be given.

10.3 Valuation

- a) There shall be single valuation of theory papers.
- b) Internal assessment shall be by the concerned teaching faculty. An external examiner along with an internal examiner shall conduct the clinical practicum examination at the end of VI and VIII semesters.

11.0 Photo copy, Seeing, Retotalling and Revaluation

11.1 A candidate who desires to apply for photo copy of his/her theory answer script may do so by paying prescribed fee and submitting prescribed application directly to the Registrar (Evaluation) within the date, as specified from time to time.

11.2 A candidate who desires to apply for:

- i) Re-totalling
- ii) Viewing and Re-totalling
- iii) Revaluation
- iv) Viewing and Revaluation of his/her theory answer script, may do so by paying the prescribed fee and by submitting the prescribed application, along with the relevant original marks card, to the Registrar (Evaluation), UOM, through the Head of the Institution within the date as notified from time to time. There shall be no provision for only viewing.

11.3 The re-totalling shall provide for checking whether all the answers have been valued and whether the totaling is correct. In case any answer or part thereof has not been valued, that part may be referred to another valuer, and marks so awarded shall be added to the total. In case there is any mistake in totaling or carryover of marks from the inside sheets to the facing sheet, the Registrar (Evaluation), UOM may have it corrected with the approval of the Vice Chancellor.

11.4 The result of re-totalling shall be announced as far as possible within 15 days from the last date fixed for receipt of applications.

11.5 The result of revaluation shall as far as possible be announced within 40 days from the last date fixed for receipt of applications.

11.6 In general, revaluation shall be got done by a valuer outside the jurisdiction of the University. However, under inevitable circumstances, revaluation may be got done by an internal valuer, who has not valued that particular course.

11.7 (a) If the difference between the original marks and the revaluation marks does not exceed 10 percent of the maximum marks prescribed for that theory course, the average of the two marks shall be the final award.

(b) If the difference between the original marks and the revaluation marks is more than 10 percent of the maximum prescribed for that theory course, such scripts shall be got valued by another external examiner. The average of the nearest two shall be the final award of marks.

- (c) In cases where one or more answers are not valued by the original valuer, then the marks awarded by the subsequent valuer, as far as these answers are concerned, shall be taken, as they are, without averaging with the marks of the other answers.
- 11.8 In cases where the difference between the original marks, first revaluation marks or / and the second revaluation marks clearly indicate that a particular examiner has been erratic in his/her valuation, then such cases shall be referred to the “Malpractices and Lapses Enquiry Committee” to establish whether or not any valuer has been erratic in his/her evaluation, and to recommend if the committee so desires, any punitive measures against the valuer.
- 11.9 If there is a complaint of a serious nature, of erratic or unfair valuation in any course for a group of candidates, the Vice Chancellor may after a preliminary enquiry, order for special valuation of the concerned group of or entire set of candidates in the course concerned. After such special valuation, a random sample of 10 percent of the answer scripts, subject to a minimum of 10, shall be referred for review.
- The provision for gracing shall also apply to such candidates after re-totalling and revaluation. However, the grace marks shall be shown separately in marks ledger and not in marks card.

12.0 Classification of successful candidates

- 12.1 Minimum for a pass
- (a) in each course shall be 40%
 - (b) in theory component shall be 40%
 - (c) in clinical practicum shall be 50%. However, for a pass in the entire Programme the candidate shall secure a minimum of 50% in aggregate of all courses of all the semesters put together.
- 12.2 If a candidate passes in all courses, but secures less than 50% of marks in aggregate in a semester, the same shall be indicated in the statement of marks of that semester as “**Not Secured 50% in all courses put together**”. **In such a case, the candidate can choose to repeat one or more courses to obtain an aggregate of 50% marks.**
- 12.3 For declaration of First class with Distinction / First Class / Second class, the aggregate of the total marks secured by a candidate (including repeaters) in all the semesters put together shall be considered as under:
- | | | | |
|----|----|-------|------------------------------|
| 75 | <P | < 100 | First Class with Distinction |
| 60 | <P | < 75 | First Class |
| 50 | <P | < 60 | Second Class |
- Here P is the percentage of total marks secured in all the semesters of that course.

13.0 Provision for Repeaters

- 13.1 A candidate is allowed to carry all the previous uncleared theory courses to the subsequent semester/s (subject to 13.2 and 13.3 below). However, candidate failing in the clinical practicum examination shall not be eligible for admission to the next semester. Such candidates shall repeat the previous semester/s, as the case may be, with respect to clinical work.
- 13.2 Such of those candidates who have failed/remained absent and who seek improvement in any one or more theory courses in a semester, henceforth called as REPEATERS, shall appear/improve in such courses during the two immediate successive examinations of that semester (Subject 13.3).
- 13.3 Examination for odd/even semester shall be conducted respectively at the end of odd/even semesters (odd with odd, even with even).
- 13.4 Such of those candidates who have discontinued the course/failed to take admission to the next semester, shall get admitted to the concerned semester in the

immediate next academic year only. This provision is available to a candidate only twice in the entire duration of the Programme.

- 13.5 The candidate shall take the examination as per the syllabus and the scheme of examination in force during the subsequent appearances.
- 13.6 A candidate who seeks improvement has to surrender the Provisional Pass Certificate / Original Marks Cards of that semester (as applicable).
- 13.7 Improvement is allowed only in theory courses. However, the marks secured in the earlier attempt shall be retained if the same is higher.
- 13.8 A candidate is permitted to apply for improvement in any theory course of the particular semester within 30 days from the date of declaration of results of that semester.

14.0 Award of Grace Marks

- 14.1 Grace marks shall be awarded to a course to a maximum of 2%, if after gracing, the candidate gets minimum prescribed marks and passes in that course. The maximum grace marks for the whole examination shall not exceed 10 marks. The grace marks shall be awarded to the courses in the order of their appearance..

Note:

- (1) If a course has several components such as theory, practical, sessional etc. then the grace marks of 2% shall be calculated for all components together and shall be added to that component for which minimum is prescribed.
 - (2) Gracing is not applicable to clinical practicum.
- 14.2 A candidate shall be eligible to a maximum of 5 grace marks, provided, the candidate
 - (a) Appears for entire examination
 - (b) he/she has failed in only one course
 - (c) passes the examination by such gracing
 - (d) gets the minimum prescribed marks in the course and aggregate for passing by such gracing.
 - 14.3 Gracing shall also be done for the purpose of declaring classes (First Class with Distinction, First Class and Second Class) on the following guidelines.
 - a) For an examination with a maximum of 500 marks or less there shall be a gracing of **two marks** only.
 - b) If the maximum marks prescribed for an examination is more than 500 marks, every unit of 500 marks or part thereof shall be graced by **one mark**. However, such gracing shall not exceed **four marks** in all.
 - c) This provision is applicable only in the VI semester examination.
 - 14.4 Gracing under 14.1 and 14.2 shall not be applied simultaneously for the same candidate in any examination.
 - 14.5 Grace marks awarded for making up of deficiency in a course/s of a semester shall be deducted first from out of the component/s of the same course which has no minimum for pass. After such deduction the balance of grace marks if any, shall be deducted equally (as far as possible) from the marks obtained in other course/s of that semester, in the order of their appearance, without affecting the results (pass etc.) of the candidate.
 - 14.6 Grace marks awarded as per 14.1 for passing a course and 14.2 for passing the whole examination, and also the corresponding marks deducted as per 14.5 are to be shown only in the ledger and not in the statement of marks. However, the grace marks awarded for declaration of class shall be indicated in the statement of marks.
 - 14.7 Any fraction in the calculation of percentage of grace marks as above may be rounded off to next higher digit.
 - 14.8 In case of tie, the candidate who secures marks without grace or less grace is preferred for ranking/awarding prizes/medals.

Note: Illustrations of gracing are given in Annexure – IV

14.9 This provision of grace marks as per 14.1 to 14.6 is not available for examinations conducted by the University, if the gracing in such examination is regulated by any central act.

15.0 Declaration of Rank

15.1 Ranks shall be declared for the number of persons equal to 10 percent of the total number of candidates appearing for any final semester examinations (fractions being rounded off to the **nearest integer** as per convention), subject to a minimum of one and maximum of ten (provided there were at least five candidates appeared for the examination).

15.2 Ranks shall be declared on the basis of the aggregate of the total marks secured by a candidate in all the semesters.

15.3 Ranks shall be given from **one** onwards in the descending order of the total marks obtained in all the examinations considered for the purpose.

15.4 If more persons than one are bracketed with the same marks, all of them shall get the same rank, which is the highest possible rank for them. Ex: If two persons are bracketed with the same marks for the top position, both will get the same rank (Rank-I) and so on.

15.5 Rank certificate shall be issued only up to **Rank-X** for ranks actually declared as per 15.1 above.

15.6 Only candidates obtaining first class and above are eligible for ranks.

15.7 A repeater (including a candidate who seeks improvement) shall not be eligible for rank.

16.0 Marks Cards

The marks cards shall be laminated after affixing the hologram and issued only when a candidate passes (at the time of passing) all papers of a particular semester.

17.0 Barring of Simultaneous Study

17.1 No candidate admitted to a degree course, under the jurisdiction of this **Institute**/University, shall be permitted to study simultaneously in any other course leading to a degree (regular, evening & morning) offered by this University of any other University.

17.2 If a candidate gets admitted to more than one course, the University shall cancel without giving prior notice, his/her admission to all the courses to which he/she has joined.

18.0 Miscellaneous

18.1 These revised regulations will apply to candidates admitted for the academic year 2016-2017 and onwards for the Programme mentioned in Regulation No.1.0 above.

18.2 Other regulations not specifically mentioned above shall be as per the Regulations of the University as applicable from time to time.

- 18.3 The University shall award the degree to successful candidates only after completion of internship.
Any other issue not envisaged above, shall be resolved by the Vice Chancellor in consultation with the appropriate Bodies of the University, which shall be final and binding.

REGISTRAR

VICE CHANCELLOR

UNIVERSITY OF MYSORE

Eligibility for Admission

A) Bachelor of Audiology and Speech-Language Pathology/ B.ASLP

- a) Admission to Bachelor of Audiology and Speech-Language Pathology/B.ASLP is open to candidates who have passed the two-year pre-university examination conducted by the Pre-university Board of Education in the State of Karnataka or any other examination (10+2) considered as equivalent thereto by the University of Mysore.
- b) Candidates who have obtained a minimum of 50% (45% in the case of SC/ST candidates) in the PCMB group or combinations thereof, in their PUC or qualifying examination are eligible for admission.
- c) Only those applicants who have studied at least three subjects from among Physics, Chemistry, Biology and Mathematics shall be eligible for admission (PCM/PCB/CMB/PMB).
- d) In case of a tie between candidates in the marks scored in PCMB or combinations thereof, a candidate who has studied Biology shall have priority for admission. In the event that there is a tie among the biology candidates, then the aggregate marks of the qualifying examination shall be considered for selection.

REGISTRAR

VICE CHANCELLOR

Annexure – II (a)

**SCHEME OF EXAMINATION UNDER INTEGRATED SEMESTER PATTERN
B.ASLP**

Sem No.	Paper No.	Paper Code	Title of the Paper	Marks		
				Theory	I.A.	Total
1	2	3	4	5	6	7
I	1.1	25611	Introduction to Speech - Language Pathology	50	25	75
	1.2	25612	Introduction to Audiology	50	25	75
	1.3	25613	Anatomy, Physiology & Pathology of	50	25	75
		25614	Communication Sciences and Disorders			
	1.4	25616	Psychology related to Communication Sciences and Disorders	50	25	75
	1.5	25617	Biomedical Instrumentation and Acoustics	50	25	75
	1.6	C1	Clinicals (Speech-Language Pathology & Audiology)			75*
II	2.1	25621	Diagnostics and Therapeutics in Speech - Language Pathology	50	25	75
	2.2	25622	Audiological Evaluation	50	25	75
	2.3	25623	Genetics, Paediatrics and Epidemiology in	50	25	75
		25626	Communication Sciences and Disorders.			
	2.4	25624	Neurology	50	25	75
	2.5	25625	Linguistics, Phonetics & Language Sciences	50	25	75
	2.6	C2	Clinicals (Speech-Language Pathology & Audiology)			75*
III	3.1	25631	Maxillofacial Anamolies and Laryngectomy	50	25	75
	3.2	25632	Phonological Disorders	50	25	75
	3.3	25633	Diagnostic Audiology: Behavioral Tests	50	25	75
	3.4	25634	Educational Audiology	50	25	75
	3.5	25635	Otorhinolaryngology	50	25	75
	3.6	C3	Clinicals (Speech-Language Pathology & Audiology)			75*
IV	4.1	25641	Fluency and its Disorders	50	25	75
	4.2	25642	Voice and its Disorders	50	25	75
	4.3	25643	Diagnostic Audiology: Physiological Tests	50	25	75
	4.4	25644	Rehabilitative Audiology	50	25	75
	4.5	25645	Research methods in Communication Sciences and Disorders	50	25	75
	4.6	C4	Clinicals (Speech-Language Pathology & Audiology)			75*
V	5.1	25651	Motor Speech Disorders in children	50	25	75
	5.2	25652	Child Language Disorders	50	25	75
	5.3	25653	Statistical Methods for Communication Sciences and Disorders	50	25	75
	5.4	25654	Hearing Aids	50	25	75
	5.5	25655	Pediatric Audiology	50	25	75
	5.6	C5	Clinicals (Speech-Language Pathology & Audiology)			75*
VI	6.1	25661	Dysarthria and Apraxia	50	25	75
	6.2	25662	Aphasia and other Language Disorders	50	25	75
	6.3	25663	Environmental Audiology	50	25	75

B.ASLP ISS Scheme - 4 years programme

	6.4	25664	Rehabilitative Technology for individuals with hearing impairment	50	25	75
	6.5	25665	Organization & Administration of Speech and Hearing Centers	50	25	75
	6.6	C6	Clinicals (Speech-Language Pathology & Audiology) (Internal + External)			75*
VII & VIII	CIP	Clinical Internship programme Clinical Speech-Language Pathology (Internal + External)				75*
		Clinical – Audiology (Internal + External)				

* 25 marks for IA and 50 marks for Clinical Practicum Examination for evaluation of Diagnostics, Assessment, Therapeutic plan, Presentation & Clinical knowledge.

REGISTRAR

VICE CHANCELLOR

UNIVERSITY OF MYSORE
INTEGRATED SEMESTER SCHEME (MODEL QUESTION PAPER PATTERN)
(All Units are Compulsory)

Paper Title:
Paper Code:

Max. Marks 50

Unit No.	Question Number	Question/s	Marks	
I	1	A x OR	10	
	2 (a) (b)	B x	08	
		C x	02	
II	3 (a) (b)	D x	07	
		E x	03	
	4	OR F x	10	
III	5 (a)	G x	03	
	(b)	H x	04	
	(c)	I x	03	
	6 (d) (e)	OR	J x	06
		K x	04	
IV	7 (a)	L x	05	
	(b)	M x	03	
	(c)	N x	02	
	8	OR	O x	10
V	9 (a)	P x	05	
	(b)	Q x	05	
	10 (a) (b)	OR	R x	09
S x		01		

Regulation No.9.5a: For a theory course carrying 50 marks, each full question shall carry 10 marks with internal division like, 8+2, 6+4, 5+5, 5+3+2 and so on. Maximum number of subdivision in a question shall be THREE.

REGISTRAR

VICE-CHANCELLOR

Annexure – IV

GRACING REGULATIONS

B.ASLP

Regulation No.14.1

Illustration – 1

I – SEMESTER

Sl. No	Course No./ Title		Theory Exmn.			Sessional Marks		Total			Net Ded	SM after Ded	Net total (5)+(13)	Remarks
			Max	Min	Marks Scored	Max	Marks Scored	Max	Min	Marks Scored				
1	2		3	4	5	6	7	8	9	10	11	12	13	14
1	1.1	A	50	20	18+2	25	11	75	30	31	1	10	30	Passes
2	1.2	B	50	20	19+1	25	11	75	30	31	1	10	30	Passes
3	1.3	C	50	20	23+1	25	06	75	30	30	-	06	30	Passes
4	1.4	D	50	20	24	25	10	75	30	34	-	10	34	Passes
5	1.5	E	50	20	18+2	25	12	75	30	30	2	10	30	Passes
6	1.6	F	50	20	21	26	06	75	30	27	-	06	27	Fails

Illustration – 2

II – SEMESTER

Sl. No	Course No./ Title		Theory Exmn.			Sessional Marks		Total			Net Ded	SM after Ded	Net total (5)+(13)	Remarks
			Max	Min	Marks Scored	Max	Marks Scored	Max	Min	Marks Scored				
1	2		3	4	5	6	7	8	9	10	11	12	13	14
1	2.1	A	50	20	21+1	25	08	75	30	30	-	08	30	Passes
2	2.2	B	50	20	18+2	25	15	75	30	35	5	10	30	Passes
3	2.3	C	50	20	19+2	25	09	75	30	30	-	09	30	Passes
4	2.4	D	50	20	18+2	25	11	75	30	31	1	10	30	Passes
5	2.5	E	50	25	25	25	15	75	38	40	-	15	40	Passes
6	2.6	F	50	25	28	25	08	75	38	36	-	08	36	Fails

Note: To pass in 2.6, the candidate needs 2 grace marks. The candidate has to repeat clinical practical examination, as gracing is not applicable to practicals.

Regulation : 14.2

Illustration – 3

VI – SEMESTER

Sl. No	Course No./ Title		Theory Exmn.			Sessional Marks		Total			Net Ded	SM after Ded	Net total (5)+(13)	Remarks
			Max	Min	Marks Scored	Max	Marks Scored	Max	Min	Marks Scored				
1	2		3	4	5	6	7	8	9	10	11	12	13	14
1	6.1	A	50	20	23	25	10	75	30	33	2	08	31	Passes
2	6.2	B	50	20	20	25	12	75	30	32	2	10	30	Passes
3	6.3	C	50	20	24	25	10	75	30	34	1	09	33	Passes
4	6.4	D	50	20	17+5	25	08	75	30	30	-	08	30	Passes
5	6.5	E	50	25	26	25	12	75	38	38	-	12	38	Passes
6	6.6	F	50	25	28	25	10	75	38	38	-	10	38	Passes

Regulation No.9.5a: For a theory course carrying 50 marks, each full question shall carry 10 marks with internal division like, 8+2, 6+4, 5+5, 5+3+2 and so on. Maximum number of subdivision in a question shall be THREE.

B.ASLP ISS Scheme - 4 years programme

Semester I

PAPER: INTRODUCTION TO SPEECH - LANGUAGE PATHOLOGY

Objectives of the paper

After completion of the course students shall have;

- Understanding of the relationship between Communication, Speech and Language
- Knowledge of Physical, Biological, Social, Psychological and Linguistic bases of speech
- Understanding of Normal speech and language development
- Understanding of causes related to speech and language disorders
- Knowledge of characteristics of speech and language disorders

Unit 1: Basic Concepts in speech, language and communication - 10 Hrs

- 1.1 Definitions of communication, speech, language and their components
- 1.2 Distinctions and similarities between them
- 1.3 Basic models, levels, modes and functions of speech communication
- 1.4 Speech as an overlaid function, speech chain.
- 1.5 Characteristics of good speech
- 1.6 History and development of profession of SLP in Indian context
- 1.7 Role of Speech-Language Pathologists in various settings

Unit 2: Bases of speech -12 Hrs

- 2.1. 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, acoustic analysis and acoustic features of speech sounds, aerodynamics of speech production.
- 2.2. Social, psychological, neurological/ biological and linguistic bases of speech

Unit 3: Normal developmental aspects – 10 Hrs

- 3.1. Normal development of speech and language
- 3.2. Development of articulation
- 3.3. Development of voice
- 3.4. Development of fluency and prosody
- 3.5. Prerequisites and factors affecting for speech and language development
- 3.6. Factors

Unit 4: Basic concepts related to incidence and causative factors – 12 Hrs

- 4.1. Definition: Speech –Language Pathology
- 4.2. Incidence and prevalence
- 4.3. Causes of speech and language disorders

Unit 5: Brief overview of speech- language, swallowing disorders: classification and characteristics - 12 Hrs

- 5.1 Voice disorders- based on Pitch, Loudness and Quality of voice
- 5.2 Phonological disorders- misarticulation, apraxia and dysarthria
- 5.3. Fluency disorders – stuttering, cluttering, neurogenic stuttering
- 5.4. Language disorders – aphasia in children and adults, cerebral palsy, specific language impairment, and hearing impairment, Autism spectrum disorders, Learning disability, Intellectual disability
- 5.5. Feeding and Swallowing disorders

PRACTICUM

Unit 1:

1. Reading practical work book

B.ASLP ISS Scheme - 4 years programme

2. Demonstration of different types of wave forms – quasi-periodic, quasi-random, burst and silence
3. Listening to cassettes: (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 airflow rate (j) Phonation duration
5. Recording normal speech samples and analyze the recorded normal sample with respect to: Phonological, morphological and syntactic development
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 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 one sample from articulation, language, fluency and voice disorders
5. Analysis of speech and language behavior of population from diverse cultural background
6. Observation of diagnostics and therapy 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 behavior
9. Report on the available audiovisual material in the units and clinics of department of Clinical services

REFERENCES

Common to all units:

- Bloom, L & Lahey, M. (1978). *Language development & language disorders*. John Wiley & Sons, New York.
- Crystal, D. (1980). *Introduction to language pathology*. Edward Arnold Ltd, London.
- Fogle, P.T. (2013). *Essentials of communication sciences & disorders*, Delmar, Cengage learning.
- Anderson, N.B., & Shames, G.H. (2011). *Human communication disorders*, Pearson Education Inc, New Jersey.
- Justice, L.M., & Redle, E, E. (2014). *Communication sciences and disorders- A clinical evidence based approach*, Pearson education, Inc, USA.
- Roeser, R. J., Pearson, D.W., & Tobey, E.E. (1998). *Speech-Language pathology*, Desk reference, Theme, New York.
- Gunter, C.D., & Koenig, M.A. (2011). *Communication development and disorders for partners in service*, Plural publishing, San Diego.

Unit 1

- Dance F.X & Larson, C.E. (1972). *Speech communication concepts and behaviors*. Holt, Rinehart & Winston Inc, New York.
- Perkins, W.H. (1977). *Speech Pathology – An applied behavioral sciences*. C.V. Mosby Co., St.Louis.
- Anderson, N.B., & Shames, G.H. (2011). *Human communication disorders*. Pearson education, Inc, New Jersey.
- Fogle, P.T. (2013). *Essentials of communication sciences & disorders*, Delmar, Cengage learning.
- Justice, L.M., & Redle, E, E. (2014). *Communication sciences and disorders- A clinical evidence based approach*, Pearson education, Inc, USA.

B.ASLP ISS Scheme - 4 years programme

- Roeser, R. J., Pearson, D.W., & Tobey, E.E. (1998). *Speech-Language pathology desk reference*, Theme, New York.
- Gunter, C.D., & Koenig, M.A. (2011). *Communication development and disorders for partners in service*, Plural publishing, San Diego.
- Roseberry-McKibbin., & Hegde, M. N. (2011). *An advanced review of Speech- Language pathology*, 3rd edition, Pro-ed, Inc, Texas.
- Rathna, N. (1993). *Speech and Hearing in last 30 years*. A publication of ISHA.
- Status of disability in India. (2012). A publication by RCI, Crossway communication pvt ltd, New Delhi.
- Manual for training of PHC medical officers (2003). A publication by RCI, Grand print & process, New Delhi.

Unit 2

- Borden, G.N & Harris, K.S. (1980). *Speech science primer*. Williams and Wilkins Co., USA.
- Daniloff, R. (1980). *Physiology of speech and hearing – An introduction*. Prentice Hall, New Jersey.
- Denes, P.B & Pinson, E.N. (1963). *The speech chain*. Bell Telephone Labs, USA.
- Fry, D.B. (1979). *The physics of speech*. Cambridge Univ. Press, New Jersey.
- Anderson, N.B., & Shames, G.H. (2011). *Human communication disorders*. Pearson education, Inc, New Jersey.
- Roseberry-McKibbin., & Hegde, M. N. (2011). *An advanced review of Speech- Language pathology*, 3rd edition, Pro-ed, Inc, Texas.
- Angell, C.A. (2010). *Language development and disorders: A case study approach*, Jones & Bartlett publishers, LLC.
- Justice, L.M., & Redle, E, E. (2014). *Communication sciences and disorders- A clinical evidence based approach*, Pearson education, Inc, USA.
- Roeser, R. J., Pearson, D.W., & Tobey, E.E. (1998). *Speech-Language pathology desk reference*, Theme, New York.

Unit 3

- Minifie, F.D. et al. (1973). *Normal aspects of speech, hearing and language*. Prentice Hall, New Jersey.
- Zemlin, W.R. (1968). *Speech and hearing sciences*. Prentice Hall Inc, New York.
- Anderson, N.B., & Shames, G.H. (2011). *Human communication disorders*. Pearson education, Inc, New Jersey.
- Fogle, P.T. (2013). *Essentials of communication sciences & disorders*, Delmar, Cengage learning.
- Justice, L.M., & Redle, E, E. (2014). *Communication sciences and disorders- A clinical evidence based approach*, Pearson education, Inc, USA.
- Gunter, C.D., & Koenig, M.A. (2011). *Communication development and disorders for partners in service*, Plural publishing, San Diego.
- Roseberry-McKibbin., & Hegde, M. N. (2011). *An advanced review of Speech- Language pathology*, 3rd edition, Pro-ed, Inc, Texas.
- Roeser, R. J., Pearson, D.W., & Tobey, E.E. (1998). *Speech-Language pathology desk reference*, Theme, New York.

Unit 4

- Crystal, D & Varley, R. (1993). *Introduction to language pathology*. WhurrPub. London.
- Haynes, O.W. & Shulman, B.B. (1994). *Communication development – foundations, processes anti-clinical applications*. Prentice Hall, New Jersey.
- Hegde, M.N. (1994). *A course book on aphasia and other neurogenic language disorders*. Singular publishing group, San Diego.
- Angell, C.A. (2010). *Language development and disorders: A case study approach*, Jones & Bartlett publishers, LLC.
- Fogle, P.T. (2013). *Essentials of communication sciences & disorders*, Delmar, Cengage learning.
- Justice, L.M., & Redle, E, E. (2014). *Communication sciences and disorders- A clinical evidence based approach*, Pearson education, Inc, USA.

B.ASLP ISS Scheme - 4 years programme

Unit 5:

- Bloom, L & Lahey, M. (1978). Language development and language disorders. John Wiley and Sons Ltd., New York.
- Crystal, D. (1980). Introduction to language pathology. Edward Arnold Ltd. London.
- Grunewell, P. (1990) (Ed.). Developmental speech disorders – clinical issues and practical implementation. Churchill Livingstone Inc, New York.
- Milloy, N.R. (1991). Breakdown of speech causes and remediation. Chapman and Hall, London.
- Nation, J.E & Aram, D.M. (1982). Human communication disorders – An introduction. 3rdEdn, Allyn and Bacon, Boston.
- Shulman, G.H. et al. (1998). Human communication disorders – An introduction. 3rdEdn. Allyn & Bacon, Boston.
- Skinner, P.H & Shelton, R.L. (1978). Speech, language and hearing – normal processes and disorders. Addison-Wesley Pub, USA.
- Weiss, C.E & Lillywhite, H.S (1980). Clinical management of articulatory and phonologic disorders. Mosby and Co., New York.
- Roseberry-McKibbin., & Hegde, M. N. (2011). An advanced review of Speech- Language pathology, 3rd edition, Pro-ed, Inc, Texas.
- Angell, C.A. (2010). Language development and disorders: A case study approach, Jones & Bartlett publishers, LLC.
- Fogle, P.T. (2013). Essentials of communication sciences & disorders, Delmar, Cengage learning.
- Justice, L.M., & Redle, E, E. (2014). Communication sciences and disorders- A clinical evidence based approach, Pearson education, Inc, USA.
- Roeser, R. J., Pearson, D,W., & Tobey, E.E. (1998). Speech-Language pathology desk reference, Theme, New York.

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PAPER: INTRODUCTION TO AUDIOLOGY

Objectives:

After completion of the course, the student should be able to

- Explain the origin of audiology
- Take case history and explain the importance of case history in clinical diagnosis
- Explain the physical properties of sound and its psychophysical correlates
- Explain the pathological conditions that would cause hearing loss
- Explain the usefulness of tuning fork tests in identification of different type of hearing loss.

Unit 1: Historical aspects and case history -10 hrs

1.1 Historical aspects

- History of Audiology
- Medical and non-medical fields associated with audiology
- Development of Audiology in INDIA
- Branches of Audiology
- Scope of Audiology

1.2 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

Unit 2: Concept of dB and threshold measurements 2.1 dB concept -12 hrs

- Different aspects of the dB
- Power and pressure formulae, zero dB reference for pressure and power
- Calculation of dB values from absolute values and vice-versa
- Calculation of overall dB when two signals are superimposed, hearing level, sensation level
- Application of dB

2.2 Threshold concept

- Threshold of audibility
- MAP and MAF
- Threshold of pain
- application of MAP and MAF

Unit 3: Properties of sound-10 hrs

- 3.1 Frequency: Concept – frequency, octave frequency, Psychophysical correlates, Factors affecting pitch
- 3.2 Intensity: Concept, Psychophysical correlates: Phons and sones – relation between phons and sones, use of phon and sone graph, computation of relative loudness of two given sounds using these graphs.
- 3.3 Duration: Basic concept
- 3.4 Differential sensitivity for intensity, frequency and duration.

Unit 4: Causes of Hearing Loss - 12 hrs

- 4.1 Different types of hearing loss, general characteristics of conductive, mixed and sensorineural hearing loss
- 4.2 Classification of causes of hearing loss. Causes of hearing impairment: hereditary hearing loss, congenital hearing loss, acquired hearing loss in children and adults, causes of central auditory disorders.

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Unit 5: Tuning Fork Tests -10 hrs

- Nature and properties of tuning fork
- Tuning fork tests: Qualitative tests – Rinne, Weber and Bing
- Quantitative test: Schwabach
- Interpretation, advantages and disadvantages
- Audiometric version of Weber and Bing test.
- Tuning fork tests findings in different degrees and type of hearing loss.

PRACTICUM

1. Otoscopy of individuals with normal hearing across age groups (Pediatric, adult and older adults) at least 5 in each group.
2. To familiarize with different types of audiometers.
3. To familiarize with different signals/stimuli used for audiometry
4. Generation of simple sine wave
 - With different frequencies
 - With different amplitudes
 - With different phase
5. Taking case history of 5 normal hearing individuals
6. Administration and interpretation of tuning fork tests on individuals with normal hearing (5 Nos.)
7. Measurement of threshold of audibility in individuals with normal hearing using MAP and MAF (5 Nos.)
8. Measurement of DLI, DLF in individuals with normal hearing (5 Nos.) and generation of stimuli for DLI & DLF

REFERENCES

Common to All:

- Bess, F. H., & Humes, L. E. (2008). *Audiology: The Fundamentals* (Fourth.). US: Lippincott Williams & Wilkins.
- Martin, F. N., & Clark, J. G. (2012). *Introduction to Audiology* (11th ed.). Boston: Pearson Education.
- Newby, H. A. (2008). *Audiology* (3rd ed.). New York: Thieme.

Additional reading:

Unit 1:

- Hall, J. (2013). *Introduction to Audiology Today* (1st ed.). Boston: Pearson Education.
- Kamini, R. (1981). *Development of a Case History Form for Children with Hearing Loss*. Mysore: University of Mysore.
- Newby, H. A. (1985). *Audiology* (2nd ed.). New York: Appleton-Century-Crofts.
- Silman, S., & Silverman, C. A. (1997). *Auditory Diagnosis: Principles and Application*. New York: Thomson.

Unit 2:

- Deutsch, L. J., & Richards, A. M. (1979). *Elementary Hearing Science* (1st ed.). Boston: Allyn and Bacon.
- Gelfand, S. A. (2010). *Hearing: An Introduction to Psychological and Physiological Acoustics* (5th ed.). London: Informa Health Care.
- Kramer, S. (2014). *Audiology Science to Practice*. San Diego: Plural Publishing.
- Sahley, T. L., & Musiek, F. E. (2015). *Basic Fundamentals in Hearing Science*. San Diego: Plural Publishing.
- Yost, W. A. (2000). *Fundamentals of Hearing: Instructors Workbook* (4th ed.). New York: Academic Press Inc.

B.ASLP ISS Scheme - 4 years programme

Unit 3:

- Deutsch, L. J., & Richards, A. M. (1979). *Elementary Hearing Science* (1st ed.). Boston: Allyn and Bacon.
- Durrant, J. D., & Lovrinic, J. H. (1977). *Bases of Hearing Science*. Baltimore: The Williams and Wilkins Company.
- Gelfand, S. A. (2010). *Hearing: An Introduction to Psychological and Physiological Acoustics* (5th ed.). London: Informa Health Care.
- Kramer, S. (2014). *Audiology Science to Practice*. San Diego: Plural Publishing.
- Speaks, C. E. (1999). *Introduction to Sound: Acoustics for Hearing and Speech Sciences (3rd ed)*. New York: Delmar Cengage Learning.

Unit 4:

- Davis, H., & Silverman, R. S. (1970). *Hearing and Deafness*. New York: Holt, Rinehart and Winston.
- Sataloff, R. T., & Sataloff, J. (1980). *Hearing loss* (3rd ed.). New York: Marcel Dekker, Inc.
- Stach, B. A. (2010). *Clinical Audiology: An Introduction* (2nd ed.). Cengage Learning Delmar.

Unit 5:

- Martin, F. N. (1991). *Introduction to Audiology* (4th ed.). New Jersey: Prentice Hall.
- Newby, H. A. (1985). *Audiology* (2nd ed.). New York: Appleton-Century-Crofts.

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PAPER: ANATOMY, PHYSIOLOGY & PATHOLOGY OF COMMUNICATION SCIENCES & DISORDERS

Objectives:

After studying this course, the student should be able to demonstrate the understanding of following:

1. Anatomy of speech, language and hearing mechanism
2. Physiological system different systems in speech, language and hearing
3. General pathological conditions causing speech, language and hearing disorders

Unit 1: Overview of anatomy -10 Hrs

Preliminaries – The anatomical position, body planes, general anatomical terms, directions and locations, common anatomical terms

- 1.1 Overview of embryology of the auditory and speech mechanism

Unit 2: Anatomy and physiology of speech systems -10 Hrs

- 2.1 Respiratory system – anatomy of lower airway (trachea, lungs), physiology of breathing, volumes and capacities
- 2.2 Phonatory system – anatomy of larynx, vocal folds, physiology of larynx, voice production.
- 2.3 Resonatory and articulatory systems – anatomy of pharynx, oral cavity and nasal cavity physiology of resonatory and articulatory system – resonance and articulation..

Unit 3: Central Nervous system -10 Hrs

- 3.1 Anatomy: parts of the brain (CNS, PNS), hemispheres, lobes, functions of different parts of the brain and cranial nerves, cranial nerves important for speech & hearing functions
- 3.2 Overview of blood supply for brain and spinal cord.
- 3.3 Overview of blood supply for speech, and hearing systems

Unit 4: Anatomy and physiology of auditory systems - 12 Hrs

- 4.1 External ear – anatomy and physiology of the pinna, external auditory canal
- 4.2 Middle ear – anatomy of the tympanic membrane, ossicular chain, Eustachain 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.
- 4.3 Inner ear – Anatomy – parts of the inner ear – bony labyrinth and membranous labyrinth, cochlea, semicircular canals, utricles, saccule. Physiology of the cochlea, cochlear microphonics, summating potential theories of hearing in brief, modes of bone conduction, physiology of the SSC, utricles and saccule.
- 4.4 Auditory pathway and central hearing mechanism: Anatomy of the afferent and efferent auditory pathway, action potential.

Unit 5: General Pathology -12 Hrs

- 5.1 Introduction to pathology - Normal cell, cell injury and cellular adaptations. etiology of cell injury, pathogenesis of cell injury, pigments, atrophy, hypertrophy, cellular aging.
- 5.2 Immune pathology - Inflammation and healing – components of immune system, diseases of immunity, inflammation - chemical mediators morphology, regeneration, factors influencing healing
- 5.3 Infections and parasitic diseases with reference to speech and hearing systems. Environmental and nutritional diseases
- 5.4 Diseases caused by bacteria, fungi and viruses, neoplasia, environmental pollution, chemical and drug injury, essential nutrients, disorders of vitamins, diet and cancer, mendelian disorders.

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REFERENCES

Unit 1

- Fuller, D. R., Pimentel, J. T., & Peregoy, B. M. (2012). *Applied Anatomy and Physiology for Speech Language Pathology & Audiology*. Lippincott Williams & Wilkins, Baltimore, MD
- Jones, S. M., & Jones, T. A. (2011). *Genetics, Embryology and Development of Auditory and Vestibular Systems*. Plural Publishing, San Diego.
- Seikel, J., King, D., & Drumright, D. (2015). *Anatomy & Physiology for Speech, Language, and Hearing, V Edition*. Cengage Learning
- Zemlin, W. R. (1998). *Speech and Hearing Science: Anatomy and Physiology*. Allyn & Bacon, Needham Heights, Massachusetts

Unit 2

- Culbertson, W. R., Cotton, S. S., & Tanner, D. C. (2006). *Anatomy and Physiology Study Guide for Speech and Hearing*. Plural Publishing, San Diego.
- Fuller, D. R., Pimentel, J. T., & Peregoy, B. M. (2012). *Applied Anatomy and Physiology for Speech Language Pathology & Audiology*. Lippincott Williams & Wilkins, Baltimore, MD
- Seikel, J., King, D., & Drumright, D. (2015). *Anatomy & Physiology for Speech, Language, and Hearing, V Edition*, Cengage Learning
- Zemlin, W. R. (1998). *Speech and Hearing Science: Anatomy and Physiology*. Allyn & Bacon, Needham Heights, Massachusetts

Unit 3

- Culbertson, W. R., Cotton, S. S., & Tanner, D. C. (2006). *Anatomy and Physiology Study Guide for Speech and Hearing*. Plural Publishing, San Diego.
- Rouse, M. H. (2016). *Neuroanatomy for Speech Language Pathology and Audiology*. Jones & Bartlett Learning, LLC
- Seikel, J., King, D., & Drumright, D. (2015). *Anatomy & Physiology for Speech, Language, and Hearing, V Edition*. Cengage Learning
- Zemlin, W. R. (1998). *Speech and Hearing Science: Anatomy and Physiology*. Allyn & Bacon, Needham Heights, Massachusetts

Unit 4

- Fuller, D. R., Pimentel, J. T., & Peregoy, B. M. (2012). *Applied Anatomy and Physiology for Speech Language Pathology & Audiology*. Lippincott Williams & Wilkins, Baltimore, MD
- Musiek, F. E., & Baran, J. A. (2007). *The Auditory System: Anatomy, Physiology and Clinical Correlates*. Pearson Education, Inc.
- Plack, C. J. (2014). *The Sense of Hearing, II Edition*. Psychology Press, New York
- Seikel, J., King, D., & Drumright, D. (2015). *Anatomy & Physiology for Speech, Language, and Hearing, V Edition*. Cengage Learning
- Zemlin, W. R. (1998). *Speech and Hearing Science: Anatomy and Physiology*. Allyn & Bacon, Needham Heights, Massachusetts

Unit 5

- Fuller, D. R., Pimentel, J. T., & Peregoy, B. M. (2012). *Applied Anatomy and Physiology for Speech Language Pathology & Audiology*. Lippincott Williams & Wilkins, Baltimore, MD
- Musiek, F. E., & Baran, J. A. (2007). *The Auditory System: Anatomy, Physiology and Clinical Correlates*. Pearson Education, Inc.
- Plack, C. J. (2014). *The sense of Hearing, II Edition*. Psychology Press, New York
- Zemlin, W. R. (1998). *Speech and Hearing Science: Anatomy and Physiology*. Allyn & Bacon, Needham Heights, Massachusetts

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Semester II

PAPER: PSYCHOLOGY RELATED TO COMMUNICATION SCIENCES & DISORDERS

Objectives:

After studying this paper at the end of the semester, the student shall be able to demonstrate an understanding of the following:

- Psychology and Clinical Psychology
- Developmental Psychology
- Psychology of learning
- Neuropsychological assessment and rehabilitation
- Counseling

Unit 1: Basic Concepts in Psychology - 10 Hrs

- 1.1 Introduction To Psychology: Definition, History & Schools Of Psychology
- 1.2 Scope Of Psychology
- 1.3 Meaning & Definition Of Clinical Psychology
- 1.4 Historical Development, Modern History Of Clinical Psychology
- 1.5 Current Status Of Clinical Psychology
- 1.6 Scope As A Specialty (Clinical Psychology) In Health Sciences
- 1.7 Role Of Clinical Psychology In Speech And Hearing
- 1.8 Concept Of Normality
- 1.9 Concept Of Abnormality
- 1.10 Models Of Mental Disorders: Biological, Psychological Social Models

Unit 2: Clinical Methods - 10 Hrs

- 2.1 Methods In Clinical Psychology
 - Case History
 - Clinical Interviewing
 - Clinical Observation
 - Definition & Types Of Psychological Testing
 - Assessment of Cognitive Functions
 - Adaptive Functions,
 - Personality
 - Behavioural Assessment
- 2.2 Classification Of Abnormal Behavior
 - History, Need & Rationale Of Classification
- 2.3 Current Classificatory Systems:
 - DSM
 - ICD

Unit 3: Developmental Psychology - 10 Hrs

- 3.1 Child & Developmental Psychology:
Meaning, Definition & Scope
 - Meaning Of Growth, Development & Maturation
 - Principles Of Child Development
- 3.2 Motor Development: General Principals of Motor Development
 - Stages In Motor Development: Early Motor Development, Motor Development During Later Childhood And Adolescence, Decline With Age
- 3.3 Cognitive Development: Growth From Early Childhood To Adolescence
 - Piaget's Theory of Cognitive Development
- 3.4 Emotional Development
- 3.5 Social Development
- 3.6 Development of play behaviour

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Unit 4: Psychology of learning - 10 Hrs

- 4.1 Learning: Meaning, Definition & Characteristics
- 4.2 Theories Of Learning:
 - Introduction
 - Pavlov's Classical Conditioning: Experiments & Principles
 - Skinner's Operant Conditioning: Experiments & Principles
- 4.3 Therapeutic Techniques Based On Learning Principles
 - Skill Behavior Techniques
 - Problem Behaviour Techniques

Unit 5: Neuropsychology and counselling - 14 Hrs

- 5.1 Neuropsychology: Introduction & definition
- 5.2 Neuropsychological assessment
- 5.3 Neuropsychological rehabilitation
- 5.4 Application of neuropsychology in the field of speech & hearing
- 5.5 Counselling: Introduction & definition
- 5.6 Types of counselling: Directive & non- Directive
- 5.7 Characteristics of a good counselor
- 5.8 Documentation in counselling and follow up methods

REFERENCES

Unit 1

- Morgon C.T., King R.A., Robinson N.M. Introduction to Psychology. Tata McGraw Hill Publishing Co.
- Coleman J.C. Abnormal Psychology and Modern Life, Taraporevala Sons & Co.
- Bernstein, D.A. & Nietzel, N.T. (1980). Introduction to Clinical Psychology. New York: McGraw-Hill Book Co.
- Korchin, S.J. (1976). Modern Clinical Psychology, New York: Basic Books, Inc., Publishers.
- Gelder, M., Gath, D. & Mayou, R. (1983). Oxford Text book of Psychiatry. Oxford: Oxford University press.
- Sadock, B.J., & Sadock, V.A. (2000). Comprehensive text book of Psychiatry. New York: Lippincott Williams & Wilkins.

Unit: 2

- Siegal M.G. (Ed). (1987). Psychological Testing from Early Childhood Through Adolescence. International Universities Press.
- Kline, P. (1993). The Handbook of Psychological Testing, Routledge,
- Anastasi, A. (1999). Psychological testing, London: Freeman

Unit: 3

- Hurlock, E.B. (1981). Child development VI Ed. Mc Graw Hill International Book Co

Unit: 4

- Bower, G.H., & Hilgard, E.R. (1986). Theories of Learning. New Delhi: rentice- Hall of India Private Limited.
- Mazur (1994). Learning & Behavior. UK: Prentice – Hall International, Inc.
- Hergenhahn, B.R. (1976). An introduction to theories of Learning. UK: Prentices – Hall , Inc.
- Franks, C.M. (1969). (Ed.) Behavior therapy. New York: Mc Graw- Hill Book Ccompany
- Donna M. Gelfand & Donald P. Hartmann (1989) Child Behavior Analysis & Therapy – II Ed.

Unit : 5

- Bloom, F. & Lazeron, A. (1996). *Brain, mind, and behavior* (2nd ed.). New York: Freedman.

B.ASLP ISS Scheme - 4 years programme

- Kolb, B. & Whishaw, I.Q. (1996). *Fundamentals of human neuropsychology* (4th ed.). New York: Freeman Press.
- Luria, A.R. (1973). *The Working brain: An introduction to neuropsychology*. New York: Basic Books.
- Fletcher-Janzen, E. Reynolds, C. R., Strickland, T. L., et al. (Eds.) (2000). *Handbook of cross-cultural neuropsychology*. Kluwer Academic Publishers. (ISBN 0 306 463237)
- Rosenzweig, M.R., Leiman, A.L. & Breedlove, S.M. (1999). *Biological psychology: An introduction to behavioral, cognitive, and clinical neuroscience* (2nd ed.). Sunderland, MA: Sinauer Associates, Inc.
- Sunderland, M.A.(1998). *Introduction to behavioral, cognitive, and clinical neuroscience* (2nd ed.). Sinauer Associates, Inc.
- Trimble, M. (1996). *Biological Psychiatry* (2nd ed.). New York: Wiley.
- Ferraro, F.R. (Ed.) (2001). *Minority and cross-cultural aspects of neuropsychological assessment*. Lisse, Netherlands: Swets & Zeitlander Publishers.
- Grant, I. & Adams, K. (1996). *Neuropsychological assessment of neuropsychiatric disorders*. New York: Oxford University Press.
- Lezak, M.D. (1995). *Neuropsychological Assessment* (3rd ed.). Oxford University Press: New York.
- Albert, M.S., and Moss, M.B. (1988). *Geriatric Neuropsychology*. New York: Guilford.
- Tuokko, H., and Hadjistavropoulos, T. (1998). *An assessment and guide to geriatric neuropsychology*. London: Lawrence Erlbaum.
- Gregory, R.J. (2000). *Neuropsychological and geriatric assessment in Psychological Testing: History, Principles, and Applications* (3rd ed.). New York: Allyn & Bacon.
- Tramontana, M.G., and Hooper, S.R. (1995). *Advances in Child Neuropsychology*. New York: Springer-Verlag
- Caley, A. (1999). *Assessment of Neuropsychological Functions in Psychiatric Disorders*. New York: American Psychiatric Publishing.
- Lezak, M., Loring, D.W., and Hannay, H.J. (2004). *Neuropsychological Assessment*. Fourth Edition. New York: Oxford University Press.
- Franzen, M.D., and Robbins, D.E. (2000). *Reliability and Validity in Neuropsychological Assessment*. Second Edition. New York: Springer-Verlag.
- Schoenberg, M.R. and Scott, J.G. (Eds.). (2011). *The little black book of Neuropsychology: A Syndrome based Approach*. New York: Springer-Verlag.
- Sohlberg, M.M., and Mateer, C.A. (2001). *Cognitive Rehabilitation: An Integrative Neuropsychological Approach*. New York: The Guilford Press.
- Banks, M. E. & Ackerman, R. J. (1997). *Ethnogeriatric issues in neuropsychological assessment and rehabilitation, Topics in Geriatric Rehabilitation, 12*, 47-61
- Gelso, C.J. & Fretz, B.R. (1995). *Counseling Psychology*. New Delhi: A Prism Indian Edition.
- Hansen, J.C., Stevic, R.R. & Warner, R.W. (1987). *Counseling*. Boston: Allyn & Bacon, Inc.,
- Nelson-Jones, R. (1999). *Introduction to Counseling Skills*. London: Sage Publications.
- Rao, N.S. (1981). *Counseling Psychology*. New Delhi: Tata McGraw Hill Pub. Co.
- Palmer, S., Dainow, S. & Milner, P. (1996). *Counseling*. London, Sage Pubs.
- Shertzer, B.S. & Stone, B. (1968). *Fundamentals of Counseling*. NY: Houghton Mifflin Co.
- Street, E. (1994). *Counseling for Family Problems*. London, Sage Publications.
- Blackham, G.J. (1977). *Counseling – Theory, Process & Practice*. Belmont: Wadsworth.
- Palmer, S. (1999). *Introduction to Counseling and Psychotherapy*. London: Sage Publications.
- Corey, G. (2011). *Theory and practice of group counseling*. 8th Edition. California: Brooks/Cole Publishing Company.
- Corey, G. (2001a). *The art of integrative counseling*. Pacific Grove, CA: Brooks/Cole.
- Nelson-Jones, R. (1982). *The Theory and Practice of Counseling Psychology*. London: Holt, Rinehart and Wilson.
- Corey, G. (2008). *Theory and practice of counseling and psychotherapy*. California: Brooks/Cole.

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- Corey, G., Corey, C., and Corey, M.S. (2008). *Grups: Process and Practice*. California: Brooks/Cole.
- Handbook of counseling psychology by Woolfe and Dryden, Sage, New Delhi, 1996.
- Improving treatment compliance: counseling and systems strategies for substance abuse and dual disorders, by Dennis C.Daley.
- Jacobs, Ed. E., Masson, R.L. & Harvill, R.L. (1998). *Group Counseling: Strategies & Skills*. Pacific grove, CA: Books / Cole Pub. Co.,
- Madden, G.R. (1998). *Legal Issues in Social Work: Counseling and Mental Heath*. Thousand Oaks: Sage Publications.
- Thomas, R.M. (1990). *Counseling and Life-span development*. New Delhi: SAGE Pubs. India Pvt. Ltd.
- Tudor, K. (1998). *Group Counseling*. London: Sage Publications.
- Group Counseling by George M.Gazda, Allyn & Bacon, Boston, 1989.
- Intentional interviewing and counseling: facilitating client development in a multicultural society by Allen E.Ivey, Wadsworth Co. 1998.
- Hart, JT (1983). *Modern eclectic therapy a functional orientation to counseling and psychotherapy*. New York: Plenum.

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PAPER: BIOMEDICAL INSTRUMENTATION AND ACOUSTICS

Objectives:

After completion of the course students should have

1. Knowledge of basic technology involved in acoustic, Acoustic measurements, Digital Signal Processing and instrumentation.
2. The fundamental concepts of the technology used in the instruments for diagnostics and therapeutics in Communication, Science and disorders
3. The working principle, functioning, acoustic measurements and calibration of equipments used in Communication Sciences and disorders .
4. Basics of ICT (Information and Communication Technology) concepts and understand the applications of ICT in Communication Science and disorders
5. The basic principle and operation of transducers, amplifiers, display units, signal processing and signal acquisition elements of Biomedical Instrumentation in Communication Science and disorders.

Unit 1 : Introduction to Electronic Devices – 10 Hrs

- 1.1 Basic principle of operation and working of
 - Resistors, Variable resistor, Capacitor Inductor and Transformers
 - Semiconductor diodes and transistors
 - LEDs, Seven segment displays, LCDs
- 1.2 Introduction to Amplifiers- Transist-ORIZED and IC based
 - Concept of gain and bandwidth
 - Frequency response
- 1.3 DC power supply
 - Block diagram of DC power supply, description and working of each block
 - Linear regulated power supplies, Line regulation and Load regulation, SMPS
- 1.4 AC power supply
 - AC Voltage stabilizers - manual, Automatic and servo controlled
 - UPS and Inverters
 - Isolation transformer

Unit 2: Fundamental of Acoustics – 12 Hrs

- 2.1 Physics of Sound
 - Nature and Propagation of sound
 - Sound characteristics such as frequency, wave length , amplitude
 - Pitch and Loudness-Sone, Phon, equal loudness contour
 - Sound pressure level and Sound power level
- 2.2 Quality and properties of sound
 - Time domain and frequency domain representation
 - Acoustic Impedance
- 2.3 Acoustic Environment in closed rooms
 - Reflection and absorption, reverberation
 - Background noise, speech to noise ratio
 - Techniques to reduce reverberation
 - Acoustically treated rooms – Basic requirements, concept and structure.
- 2.4 Transducers , Sound Measurement, reproduction and recording
 - Microphones-Piezoelectric, moving coil, condenser, electret etc
 - Loudspeaker and their enclosures
 - Magnetic tape recording and reproduction, optical disc recording reproduction
 - Sound level meters & acoustic measurements

Unit 3: Introduction to Information Technology – 10 Hrs

- 3.1 Introduction to computers

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- Hardware, Memory devices and types of storage media
 - Specification of personal computers
- 3.2 Software
- Operating systems-Types, comparison and functioning
 - Application software used in Communication Sciences and disorder
- 3.3 Structure and functioning of internet and intranet
- Concept of internet and world wide web
 - Local Area Network – structure and components
- 3.4 Recording of sound using computers /laptops-Technology and guidelines for good recording

Unit 4: Instrumentation in speech, Language and hearing - 12 Hrs

- 4.1 Introduction to Electronic systems
- Pre-amplifiers and Power amplifiers
 - Filters-different types and their Frequency response
- 4.2 Principle of operation, block diagram of
- Basic technology of Analog and digital hearing aids
 - Audiometers
 - Immittance meters
 - Group amplification and Assistive Listening Devices
 - Speech spectrograph
- 4.3 Calibration of audiometers –Equipments setup and procedure.

Unit 5: Introduction to Digital Signal Processing - 10 Hrs

- 5.1 Digital basics
- Binary number system, Logic gates, Flip Flops and Counters
 - Analog Signal & Digital signal –Representation and Comparison
- 5.2 Fundamental of digital signal processing
- Converting Analog signal to Digital signal
 - Basic structure of a Digital processing system
 - Converting Digital signal to Analog signal
- 5.3 Application of DSP
- Analog signal processing Vs Digital signal processing – Comparison, merits and demerits
 - Applications of DSP in Communication Sciences and disorder.

REFERENCES

Unit 1

- Theraja, B. L. (2008). *Textbook of Electrical Technology*: Chand (S.) & Co Ltd , India.
- Godse, A. P., & Bakshi, U. A. (2007). *Electronic Devices and Circuits I*: Technical Publications.
- Mehta.V.K. & Mehta. R (2006): *Basic Engineering*: S. Chand & Co ltd
- Grob (1977). *Basic electronics*.Tokyo: McGraw Hill.

Unit 2

- Thompson, D. M. (2005). *Understanding Audio: Getting the Most Out of Your Project or Professional Recording Studio*. : Berklee Press.
- Cavanaugh, W. J., Tocci, G. C., & Wilkes, J. A. (2009). *Architectural Acoustics: Principles and Practice*: Wiley.
- Kleiner, M. (2011). *Acoustics and Audio Technology*, Third Edition (Acoustics: *Information and Communication*): J. Ross Publishing.
- Fahy, F. J. (2000). *Foundations of Engineering Acoustics*: Academic Press.
- Crocker. M. J (1998). *Handbook of Acoustics*: Wiley-Interscience

B.ASLP ISS Scheme - 4 years programme

Rossing, .T. D., Moore, F.R .& Wheeler .P.A (2001): *The Science of Sound*(3rd ed): Addison-Wesley.

Beranek (1967). *Acoustic measurements illustrations, charts, diagrams, graphs, photos, plates, cables*: New York: John Wiley.

Unit 3

Rajesh, R. S. (2002). *Computer Networks: Fundamentals and Applications*: Sangam Books Ltd.

Robertazzi, T. (2011). *Basics of Computer Networking* (Springer Briefs in Electrical and Computer Engineering): Springer.

Rajaraman, V. (1992). *Fundamental of computers*. New Delhi: Prentice Hall of India

Unit 4

Beranek, L. L., & Mellow, T. (2012). *Acoustics: Sound Fields and Transducers*: Academic Press.

Katz.J. (2014): *Handbook of Clinical Audiology* (7th.ed): North American

Sandlin.R.E(2000). *Textbook of Hearing aid amplification*: Technical and clinical consideration: Cengage hearing.

Grob (1982). *Electronic circuits and applications* .London: McGraw Hill.

Unit 5

Godse, M. A. P., & Bakshi, M. U. A. (2008). *Linear & Digital IC Application*: Technical Publications.

Malvino. A., & Bates. D. (2015): *Electronics principle* (8thed): Mc Graw-Hill education.

Borden, G.N. & Harris, K.S. 91980). *Speech science primer*.USA: Williams & Wilkins Co.

Fant, G. (1960). *Acoustic theory of speech production*. Hague: Mouton and Co.

Lieberman, P. (1977). *Speech physiology and acoustic phonetics*.New York: McMillan Co.

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PAPER: DIAGNOSTICS AND THERAPEUTICS IN SPEECH –LANGUAGE PATHOLOGY

Objectives: After studying this paper at the end of the semester, the student should be able to understand the following

- Importance of case history, diagnostics and therapeutic approaches
- Taking case history and therapy in general
- Know the Importance of Documentation, Reports to be maintained for diagnostic and therapeutic purposes

Unit 1: Overview of Procedures involved in Speech-Language Diagnostics - 10 Hrs

- 1.1 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, Case history format for various communication disorders
- 1.2 Basic terminologies and concepts
Introduction to diagnostics, Classification of Disorders: DSM, ICD, Terminologies in the diagnostic process, General principles of diagnosis, Diagnostic setup and tools

Unit 2: Methods of Information collection and Diagnostic approaches - 12 Hrs

- 2.1 Interview – principles and techniques
- 2.2 Self-reports, questionnaire, observations
- 2.3 Diagnostic models and its application to communication disorders – SLPM, Wepman, Bloom and Lahey
- 2.4 Types of diagnoses: Concept, application and its relevance to communication disorder – Clinical diagnosis, direct diagnosis, differential diagnosis, diagnosis by treatment, diagnosis by exclusion, team diagnosis, instrumental diagnosis, provocative diagnosis, tentative diagnosis advantage/disadvantages
- 2.5 Characteristics of a diagnostic clinician

Unit 3: Basic concepts of intervention in Speech-Language pathology -10 Hrs

- 3.1 General principles of speech and language therapy
- 3.2 Models in Therapeutics and its application to Speech-Language Therapy: Medical model, Behavioural model and Learning Models
- 3.3 Speech therapy set-up
- 3.4 Individual and group therapy
- 3.5 Integrated and Inclusive Education
- 3.6 Telepractice and Apps

Unit 4 Procedures for speech-language therapy - 12 Hrs

- 4.1 Approaches to speech and language therapy – Formal, informal and eclectic approaches; Behaviourist, Linguistic-Cognitive and Social interactionist approach
- 4.2 Strategies for speech and language therapy-Individual Specific and Developmental strategies
- 4.3 Planning for speech and language therapy – goals, steps, procedures, activities
- 4.4 Techniques for Speech and language therapy for various disorders of speech and language in Children
- 4.5 Importance of behavioural principles in speech and language therapy
- 4.6 Counseling and Guidance -Facilitation of parent participation and transfer of skills

Unit 5 Clinical documentation and professional codes - 10 Hrs

- 5.1 Documentation of clinical records
- 5.2 Evaluation of therapy outcome
- 5.3 Ethics in diagnosis and speech language therapy
- 5.4 Self-appraisal of clinicians

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5.5 Professional code of conduct for clinicians

PRACTICUM

1. Demonstrate on how to ask questions and to elicit responses from client parents and care givers through role play.
2. Recognize the difference between check list, inventory and questionnaire and developmental schedules.
3. Relate complaint to features presented and selecting appropriate tools for testing: recognize the difference between formal informal testing: structured vs unstructured interview.
4. Demonstrate REELS, RELT and SECS on two clients at least
5. Differentiate between speech, language and communication characteristics in a typically developing child.
6. Distinguish between segmental and suprasegmental aspects using pre recorded audio samples.
7. Distinguish between screening and diagnostic tests for language and articulation and list the standardized tests developed in India.
8. Demonstrate at least 5 earlier assessed individuals having communication disorders (live / recorded material) - deviations, delay and disorders.
9. Demonstrate speech language stimulation techniques on children having hearing impairment, mental retardation and SLI

REFERENCES

Unit 1:

- Darley,L.F .,& Spriesterbach (1991) Diagnostic Methods in Speech Pathology, 2nd Edition, Unit 2, 37-50, Harper & Row Publishers.
- Haynes.W.O., & Pindzola.R.H (2008) Diagnosis and Evaluation in Speech Pathology, 7th Edition, Unit 2 and 3, 37-43, Pearson & Ab.
- Tomblin, E. et.al. (1994). Diagnosis in Speech language pathology. San Diego: Singular Publishing Inc. 24
- Shipley.K.G., &Mc Afee, J.G (2008) Assessment in Speech-Language pathology: A resource manual.

Unit 2:

- Darley,L.F .,& Spriesterbach (1991) Diagnostic Methods in Speech Pathology, 2nd Edition, Unit 2, 51-88, Harper & Row Publishers.
- Haynes.W.O., & Pindzola.R.H (2008) Diagnosis and Evaluation in Speech Pathology, 7th Edition, 44-55 Pearson & Ab.
- Meitus,I.J & Weinberg,B (2000) Diagnosis in Speech-Language Pathology, Unit 2, 31-71, Allyn & Bacon Publishers.
- Mysak.D.E (1996) Pathologies of Speech Systems,70-97, Unit 3,73,4,98, The Williams & Watkins Company, Ballitmore.Inc

Unit 3:

- Klein, H.B., & Nelson, M. (1994). Intervention planning for children with communication disorders: A guide for clinical practicum and professional practice. New Jersey. Prentice Hall.
- Hegde, M.N. (1985). Treatment procedures in communicative disorders. Texas. Pro Ed.
- Landis,K.,Woude,J.V.,& Jongsma.A.E (2004) The Speech Language athology Treatment Planner, John Wiley & Sons.
- Anderson, C.,& VanderderGag (2005) Speech and Language Therapy: Issues in Professional Practice, Whurr Publishers.

B.ASLP ISS Scheme - 4 years programme

Unit 4:

Klein, H.B., & Nelson, M. (1994). Intervention planning for children with communication disorders: A guide for clinical practicum and professional practice. New Jersey. Prentice Hall.

Hegde, M.N. (1985). Treatment procedures in communicative disorders. Texas. Pro Ed.

Roth.P.F.,& Worthington,M.S. (1996) Treatment Resource Manual for Speech Language Pathology, Unit 1, 1-40, Singular Publishing Inc.

Unit 5:

Burrus,E.A.,& Haynes, O.W (2009) Professional Communication in Speech-Language pathology: How to Write, Walk and act like a Clinician, Unit 3 and 4, 41-55, Plural Publishing inc.

Beech.R.J., & Harding, L., & Jones,H.D. (1993) Assessment in Speech Language Therapy, Unit 1 and 2, 1-35, Routledge

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PAPER: AUDIOLOGICAL EVALUATION

Objectives:

After completion of the course, the student should be able to

- Record and interpret the various Pure tone test results
- To calculate the degree of hearing loss, and diagnose the type of hearing loss.
- Record and interpret the various speech test results
- Carry out clinical masking
- Carry out biological calibration

Unit 1: Pure tone Audiometry -12 hrs.

- 1.1 Historical developments, Rationale, Classification of audiometers, Instrumentation: Components and parts of an audiometer, Audiogram, construction of audiogram, Symbols used, Interpretation of audiogram (degree, type & configuration), Usefulness of Audiogram
- 1.2 Bone conduction (BC) Audiometry: Importance, challenges in bone conduction testing
- 1.3 Methods to find threshold (AC & BC): Method of limits, Hughson & Westlake method, Modified Hughson Westlake Method, ASHA guidelines, ANSI guidelines
- 1.4 Factors affecting AC and BC threshold, Limitations of Pure tone Audiometry

Unit 2: Speech Audiometry - 12 hrs

- 2.1 Historical developments, rationale and objectives
- 2.2 Different type of speech tests - Speech detection threshold (SDT), Speech recognition threshold (SRT), speech identification scores (SIS) - Definition, Material used, Procedure for obtaining SDT, SRT and SIS, Response mode and their clinical applications. BC speech Audiometry
 - Correlation between PTA and speech audiometry results
 - PIPB function, Articulation Index,
- 2.3 Factors affecting speech audiometry, Limitations of speech Audiometry
- 2.4 Speech materials available in English and Indian languages for Speech Audiometry (SRT & SIS)
- 2.5 Loudness based tests - MCL, UCL, Dynamic range - Definition, Materials used, Procedure, and Clinical Applications.

Unit 3: Transducers - 10 hrs

- 3.1 Different types of transducers, their performance and technical specifications – Head phones (TDH-39, TDH-49, TDH-50, HDA-200, HDA-500), Bone vibrators (B71, B - 72, KH 70 & A 20), Speakers, Insert ear phones (ER-3A, ER-5A), Microphones (Talk forward & Talk back), VU meter. Ear cushions.
- 3.2 Artificial ear, Acoustic couplers and Artificial mastoid
- 3.3 Standards: National and International standards related to Pure tone and Speech Audiometry (ANSI, ISO, IEC, ASHA & IS/BIS), Permissible Ambient Noise levels in audiometric test rooms

Unit 4: Masking – 10 hrs

- 4.1 Definition, Terminology related to masking: Test ear, non test ear, masker, maskee, cross over, cross hearing and shadow curve
- 4.2 Types of masking, Different types of stimuli used as maskers, Critical Band Concept,
- 4.3 Interaural attenuation (IA), factors affecting IA. Criteria for masking during AC, BC and factors considered.
- 4.4 Factors determining amount of masking noise- Minimum and Maximum effective masking level for AC and BC, speech.
- 4.5 Procedures for masking – Methods to find masked threshold and factors to be considered in adequate masking, Naunton's Dilemma, Rainville, SAL tests and Fusion Inferred test (FIT)

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Unit 5: Calibration - 10 hrs

- 5.1 Calibration of audiometers: 1. Subjective/real ear calibration methods for AC and BC
2. Electro-acoustic/objective calibration of the output intensity of Puretone, NBN, WBN and Speech noise through the headphones, insert receiver loud speaker and bone vibrators and frequency calibration, free field speakers calibration
- 5.2 Calibration of speech stimulus
- 5.3 Daily listening checks, application of correction factors.

PRACTICUM

1. Daily listening check and trouble shoot of different clinical audiometers
2. Preparation of correction factor chart after biological calibration on individuals with normal hearing
3. Getting familiar with different clinical audiometers, parts of audiometers and their functions
4. Familiarization with different types of transducers – earphones/ear cushion combination, speakers, insert earphones, bone vibrators
5. Appropriate placement of various transducers on clients during Audiometry including masking
6. To get familiar with instructions for carrying out pure tone audiometry, Speech audiometry and masking in 5 different languages at least
7. Familiarization with different types of stimuli used in audiometry
8. Establishment of PT thresholds (AC & BC) using ascending, descending and modified Hughson Westlake procedures in 5 individuals with normal hearing
9. Estimation of bone conduction threshold with forehead and mastoid placements in 5 individuals with normal hearing
10. Familiarization with different symbols used on audiogram for unmasked and masked AC, BC, SRT, and SIS for different transducers for right and left ear.
11. Familiarization with materials used for speech audiometry in different Indian languages and English for adults and children
12. To observe the counseling before and after audiological testing
13. Establishing UCL, MCL, DR, SRT, SDT & SIS on 5 individuals with normal hearing
14. Administration of clinical masking on 5 individuals with normal hearing
15. Familiarization with different equipment used for objective calibration of audiometers
16. Observation of objective calibration procedure for audiometers as per standards
17. Administration of SAL and Rainville on 5 individuals with normal hearing can be deleted I think if removed from theory class

REFERENCES

Common to all units

- Katz, J. (1994). Handbook of clinical audiology. 4th Ed. Chapter VII & IX. Baltimore: Williams & Wilkins.
- Katz, J. (2009). Handbook of clinical audiology. 6th Ed. Section I: Chapter 2, 3, 4, 5, 6. Baltimore: Williams & Wilkins.
- Katz, J. (2015). Handbook of clinical audiology. 7th Ed. Section I: Chapter 2, 3, 4, 5, 6. Baltimore: Lippincott Williams & Wilkins.
- Martin, F.N. (1994). Introduction to Audiology. 5th Ed. Chapter III. New Jersey: Prentice Hall.
- Martin, F.N., Clark, J. G. (2000). Introduction to audiology. 7th Ed. Chapter 4 & 5. Boston: Allyn and Bacon.
- Rintelmann, W.F. (1991). Hearing assessment. 2nd Ed. Chapter 1, 2, 3. Boston, London, Allyn and Bacon.
- Rose, D.M. (1978). Audiological assessment. Chapter VI. New Jersey: Prentice Hall.
- Silman, S. & Silverman, C.A. (1997). Auditory diagnosis principles and applications. Chapter 2, 3. New York: Academic Press Inc.

B.ASLP ISS Scheme - 4 years programme

- Roeser, R. J., Valante, M. & Hosford – Dunn, H. (2007). Audiology Diagnosis. 2nd edition. Chapters 11, 12, 13, 14. New York: Thieme Medical Publishers, Inc.
- Kramer, S. Jerger, J., & Mueller, H. G. (2014). Audiology science to practice. 2nd edition. Chapters 4, 5, 6, 7. San Diego: Plural Publishing, Inc.
- Valente, and Maureen, G. M. D. (2009). Pure tone audiometry and masking. San Diego, Plural Publishing.
- Kramer, S., Guthrie, L. A. (2014). Audiology workbook. 2nd edition. Chapter 4, 5, 6, 7. San Diego, Plural Publishing, Inc.
- Stach, B. A. (2010). Clinical audiology An introduction. 2nd edition. Chapter 5, 6, 7. Delmar, Cengage learning

Unit 1:

- Bess, F. H. & Humes, L.E. (1990). Audiology: The fundamentals. Chapter IV. London: Williams & Wilkins.
- Glorig, A. (1966). Audiometry: Principles and practices. Chapter VI. Baltimore: Williams & Wilkins.
- Kramer, S. Jerger, J., & Mueller, H. G. (2014). Audiology science to practice. 2nd edition. Chapter 4. San Diego: Plural Publishing, Inc.
- Katz, J. (2009). Handbook of clinical audiology. 6th Ed. Section I: Chapters 3, 4. Baltimore: Williams & Wilkins.
- Roeser, R. J., Valante, M. & Hosford – Dunn, H. (2007). Audiology Diagnosis. 2nd edition. Chapter 12. New York: Thieme Medical Publishers, Inc.
- Rintelmann, W.F. (1991). Hearing Assessment. 2nd Ed. Chapter 1. Boston, London, Allyn and Bacon.
- Kavita, E.M. (2001). Tutorial on Pure Tone Audiometry. An Independent project published by All India Institute of Speech and Hearing, Mysore

Unit 2:

- Kramer, S. Jerger, J., & Mueller, H. G. (2014). Audiology science to practice. 2nd edition. Chapter 7. San Diego: Plural Publishing, Inc.
- Katz, J. (2009). Handbook of clinical audiology. 6th Ed. Section I: Chapter 5. Baltimore: Williams & Wilkins.
- Roeser, R. J., Valante, M. & Hosford – Dunn, H. (2007). Audiology Diagnosis. 2nd edition. Chapter 14. New York: Thieme Medical Publishers, Inc.
- Rintelmann, W.F. (1991). Hearing assessment. 2nd Ed. Chapter 2. Boston, London, Allyn and Bacon.

Unit 3:

- Kramer, S. Jerger, J., & Mueller, H. G. (2014). Audiology science to practice. 2nd edition. Chapter 4. San Diego: Plural Publishing, Inc.

Unit 4:

- Kramer, S. Jerger, J., & Mueller, H. G. (2014). Audiology Science to Practice. 2nd edition. Chapter 6. San Diego: Plural Publishing, Inc.
- Katz, J. (2009). Handbook of clinical audiology. 6th Ed. Section I: Chapter 6. Baltimore: Williams & Wilkins.
- Roeser, R. J., Valante, M. & Hosford – Dunn, H. (2007). Audiology Diagnosis. 2nd edition. Chapter 13. New York: Thieme Medical Publishers, Inc.
- Rintelmann, W.F. (1991). Hearing assessment. 2nd Ed. Chapter 3. Boston, London, Allyn and Bacon.
- Narahari, D. (1974). Binaural fusion test as an alternative to masking in pure tone air conduction audiometry. Dissertation published by All India Institute of Speech and Hearing, Mysore.

B.ASLP ISS Scheme - 4 years programme

Unit 5:

- Katz, J. (2009). Handbook of clinical audiology. 6th Ed. Section I: Chapter 2. Baltimore: Williams & Wilkins.
- Edward, A. & Cudahy. (1988). Introduction to instrumentation in speech and hearing. Chapter 5. Baltimore: Williams and Wilkins.
- Roeser, R. J., Valante, M. & Hosford – Dunn, H. (2007). Audiology Diagnosis. 2nd edition. Chapter 11. New York: Thieme Medical Publishers, Inc.
- Rintelmann, W.F. (1991). Hearing assessment. 2nd Ed. Chapter 16. Boston, London, Allyn and Bacon.
- Silman, S., & Emmer, M. B. (2012). Instrumentation for audiology and hearing science. Theory and practice. Chapter 10. San Diego, Plural Publishing, Inc.

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PAPER: GENETICS, PAEDIATRICS AND EPIDEMIOLOGY IN COMMUNICATION SCIENCES AND DISORDERS

Objectives:

After studying the course a student will have:

1. A basic idea about the role of genetics in Speech-Language and Hearing
2. Knowledge about the various concepts related to growth and development in pediatrics.
3. Role of epidemiology in the field of communication sciences and its disorders

Unit 1: Basic Concepts, terminologies in Genetics - 10 Hrs

- 1.1 Principles of genetics – genes, human chromosome, cytogenetics, mitosis and meiosis, numerical aberrations, structural aberrations, the sex chromosome anomalies.
- 1.2 Introduction to pedigree construction, traits, environment – genetic interactions influencing fetus.
- 1.3 Introduction to laboratory techniques – Basic and advanced methods in genetics – cloning, molecular genetics, epigenetics, study of DNA.

Unit 2: Genetics in communication Disorders - 10 Hrs

- 2.1 Genetic basis of Speech- Language and Hearing impairment
- 2.2 An overview of various genetic conditions leading to communication disorders
Genetic disorders – genetic counseling, Mendelian disorders, chromosomal disorders, nonmendelian modes of inheritance, management of genetic disorders, gene therapy, human genome mapping project (HGMP)

Paper: Paediatrics

Unit 3 : Basics concepts in Paediatrics – 12 Hrs.

- 3.1 Growth and development – basic concepts, growth from birth to puberty, growth during adolescent period.
- 3.2 Early identification of perinatal pediatric disorders leading to speech and hearing impairment.
- 3.3 Nutritional disorders in children – protein energy malnutrition, water soluble vitamins, fat soluble vitamins, trace elements

Paper : Epidemiology

Unit 4 : Concepts in Epidemiology - 12 Hrs

- 4.1 Basic epidemiologic concepts and principles
- 4.2 Epidemiologic data sources and measurements
- 4.3 History of speech and hearing
- 4.4 Population at risk for hearing loss and communication delay – at risk children, established risk children, high risk checklist.
- 4.5 Incidence and prevalence of Speech- language and hearing disorders as per different census (NSSO, WHO, different registry for various disorders etc)

Unit 5 Epidemiology research - 10 Hrs

- 5.1 Epidemiologic methods – questionnaire survey, screening, personal survey, testing, media - their advantages and disadvantages
- 5.2 Primary, secondary and tertiary prevention of common disorders with examples

REFERENCES

Unit 1:

- Jung, J. H., Gagne, J.P., Godden, A.L.,
Leeper, H.A., Moon, J.B. & Seewald, R. C (1989).

B.ASLP ISS Scheme - 4 years programme

- Cardozo, I. (2012) .Status of Disability in India (2012). Rehabilitation council of India: New Delhi (pp 5- 12).
- Rangasayee, R. (2007). Status of Disability in India (20072). Rehabilitation council of India: New Delhi (pp 110- 139).
- Rathna. N. (1993). Thirty years of Speech and Hearing in India: A subjective overview. (pp 1-19). A publication of Indian Speech and hearing: Mysore.

Unit 2:

- Read, P.A. (1996). Basic Genetic Mechanisms. In Genetics of Hearing impairment. London: Whurr Publishers Ltd. (pp 18-32).
- Read, P.A. (1996). Methods of Identifying Hearing loss genes. In Genetics of Hearing impairment. London: Whurr Publishers Ltd. (pp 33-48).
- Read, P.A. (1996). The use of gene libraries in the study of the molecular genetics of the auditory system. London: Whurr Publishers Ltd. (pp 49-53).

Unit 3:

- Parthasarthy, A., Menon, P.S.N., Nair, M.K.C. (1999). IAP textbook of Pediatrics chapter,4). Jaypee brothers medical publishers. (Pvt.) Ltd.: New Delhi.

Unit 4:

- Cardozo, I. (2012) .Status of Disability in India (2012). Rehabilitation council of India: New Delhi (pp 5- 12).
- Rangasayee, R. (2007). Status of Disability in India(20072). Rehabilitation council of India: New Delhi (pp 110- 139).
- Jekel, F. J., Katz, L.D., & Elmore, G.J (2001). Basic Epidemiologic Concepts and Principles in epidemiology, Biostatistics, and Preventive Medicine (2nd Edition). Pennsylvian: Saunders (pp 1-19).

Unit 5:

- Jekel, F. J., Katz, L.D., & Elmore, G.J (2001). Basic Epidemiologic Concepts and Principles in epidemiology, Biostatistics, and Preventive Medicine (2nd Edition). Pennsylvian: Saunders (pp 78-89).

- Manual for Training of PHC Medical officers (2003). Rehabilitation council of India: New Delhi (pp 1- 10).

Unit 4 & 5 of Epidemiology have been deleted.

The content of Pediatrics under Unit 1,2,3 have been merged as Unit – 1.

Unit – 4 have been deleted.

Contents of Unit-5 have been included under Unit-2 of Genetics

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PAPER: NEUROLOGY

Objectives:

After studying this course students will be able to :

- (a) Appreciate the importance of neurology in the field of Speech-Language Pathology and Audiology
- (b) Locate the various structures of CNS and their specific functions for Speech language and hearing
- (c) Common causes of various neurological conditions
- (d) Common neurological conditions leading to speech-language and hearing disorders

Unit 1: Essential Neurological concepts and Principles and an overview of the Central nervous system & Relationship between Neuroscience and Speech-Language Hearing - 10 Hrs.

- 1.1 Scope of Neuroscience and its branches
- 1.2 Principles governing the human brain
- 1.3 Orientation to technical terminology
- 1.4 Terms related to the Neural structure
- 1.5 Structure of the CNS
- 1.6 Nervous system classification
- 1.7 Techniques for learning Neuroscience

Unit 2: Gross Anatomy of the central Nervous system - 12 Hrs

- 2.1 Central and peripheral nervous system
- 2.2 Anatomy of the brain
- 2.3 Different lobes and their functions specifically for speech-language and hearing
- 2.4 Spinal cord- structure and functions
- 2.5 Networking of spinal nerves
- 2.6 Meninges of the brain and spinal cord
- 2.7 Autonomic nervous system

Unit 3: Nerves and blood supply to the brain - 10 Hrs

- 3.1 Classification of spinal nerves their numbers and functions
- 3.2 Classification of cranial nerves their numbers and functions
- 3.3 Blood supply to the brain- various arteries supplying blood to various lobes of the brain.
- 3.4 Circle of Willis and its importance

Unit-4: Common causes of neurological conditions and neurological assessment - 10 Hrs

- 4.1 Classification of causes- infections, ageing, metabolic, tumours and technology related
- 4.2 Preventive measures to reduce the neurological conditions
- 4.3 High risk registers for neurological conditions
- 4.4 Introduction to CT scan and MRI.

Unit 5:

Common neurological conditions leading to Speech-language and Hearing disorders – signs, symptoms and behavioral characteristics – 12 Hrs

- 5.1 Cerebrovascular diseases – ischemic brain damage – hypoxic ischemic encephalopathy, cerebral infarction – intracranial haemorrhage – intracranial, subarachnoid.
- 5.2 Trauma to the CNS – subdural haematoma, epidural haematoma, parenchymal brain damages
- 5.3 Demyelinating diseases, Degenerative, metabolic and nutritional disorders – multiple sclerosis, Alzheimer's disease, Parkinsonism.

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REFERENCES

Unit-1:

Bhatnagar, C. B. (2013). Essential of Neuroscience for the study of communicative disorders. In Neuroscience for the study of communicative disorders (4th Edition).. Lippincott Williams and Wilkins : Baltimore (pp 1-34)

Unit 2:

Bhatnagar, C. B. (2013). Essential of Neuroscience for the study of communicative disorders. In Neuroscience for the study of communicative disorders (4th Edition). Lippincott Williams and Wilkins: Baltimore (pp 35-64).

Unit 3:

Bhatnagar, C. B. (2013). Essential of Neuroscience for the study of communicative disorders. In Neuroscience for the study of communicative disorders (4th Edition). Lippincott Williams and Wilkins : Baltimore (pp 65-90)

Unit 4 :

Fogle, T. P. (2013). Neurological disorders in adults. In Essentials of communication sciences and Disorders. Delmar: Cengage learning (pp 314-354)

Unit 5:

Davis, A. G. (2013). Neurological and medical considerations. In Aphasia and related cognitive communicative disorders. New York: university press. (pp23-42)

B.ASLP ISS Scheme - 4 years programme

PAPER: LINGUISTICS, PHONETICS AND LANGUAGE SCIENCES

Objectives:

At the end of the curriculum, it is expected that

- The student will have knowledge of the structural, psychological, social, and cultural nature of language.
- Will have knowledge of the subject matter of basic concepts related to linguistics and of major subfields including language acquisition and multilingualism.
- Will be enabled to integrate and relate these concepts to clinical areas pertaining to speech and language assessment and therapeutic measures.
- Will have rudimentary research skills sufficient to conduct original research focused either on primary language data, or on the second language, and sufficient to prepare them for PG program

Unit 1: Language and Linguistics - 10 Hrs

- 1.1 Introduction to Language- Definition, Characteristics of language, Functions of language, Difference between animal communication systems and human language.
- 1.2 Introduction to Linguistics – Definition, brief introduction to different branches of linguistics such as Sociolinguistics, Psycholinguistics, Neurolinguistics and Clinical linguistics. Application of linguistics with special reference to communication disorders.
- 1.3 Morphology – concepts of morph, allomorph, morpheme, bound and free forms, roots etc. Types of morphemes - inflection and derivation. Concept of word, content and function words, form classes, Processes of word formation, endocentric and exocentric constructions, grammatical categories, paradigmatic and syntagmatic relationship.

Unit 2: Syntax, Semantics and Pragmatics - 10 Hrs

Syntax – Concept, Different methods of syntactic analysis – Immediate Constituent (IC) Analysis, Phrase Structure Grammar, Transformational Generative Grammar, Introduction to the major types of transformations. Types of Sentences, Notions of competence versus performance, deep structure versus surface structure, acceptability versus grammaticality, langue versus parole.

- 2.1 A brief introduction to Semantics – homonyms, synonyms and antonyms, Semantic Feature Theory.
- 2.2 A brief introduction to Pragmatics – discourse; intent of communication

Unit 3: Phonetics and Phonology -12 Hrs

- 3.1 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.
- 3.2 Transcription systems with special emphasis on International Phonetic Alphabet (IPA); Basic Transcription practices.
- 3.3 Introduction to Phonology, classification of speech sounds on the basis of distinctive features; phonotactics; Principles and practices of phonemic analysis; common phonological processes like- assimilation, dissimilation, metathesis, haplology, epenthesis, spoonerism, vowel harmony, nasalisation, neutralization.

Unit 4: Language acquisition and Language learning -12 Hrs

- 4.1 Issues in first language acquisition; Stages of language development - prelinguistic stage and linguistic stage, acquisition of phonology, acquisition of morphology, acquisition of syntax, acquisition of semantics, acquisition of pragmatics, language and cognition.
- 4.2 Issues in second language acquisition; differences between first language acquisition and second language acquisition/learning. Bilingualism in children-compound, coordinate, simultaneous, successive
- 4.3 Inter-language theory, Language transfer & Linguistic interference; Factors influencing second language acquisition/ learning

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Unit 5: Multilingual Situation -10 Hrs

- 5.1 An introduction to the language families of the world.
- 5.2 An introduction to the language families of India.
- 5.3 Writing systems– History of writing systems, Types of writing systems, Indian writing systems

Unit 4 (b): Has been deleted as it is also there in 'Child Language Disorder' paper. (Common topic); however, the topic 'Communicative competence' has been retained as 'Intent of communication' under Unit 2 (c).

Unit 4 (d): has been renamed and shifted from here to Unit:1(b) and rephrased as 'Application of linguistics with special reference to communication disorders'.

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Semester III

PAPER: MAXILLOFACIAL ANOMALIES AND LARYNGECTOMY

Objectives

By the end of the semester the students shall be able to:

- Identify different types of orofacial anomalies and their effect on communication and other functions
- Understand the normal velopharyngeal closure and dysfunction.
- Assessment and management of CLP using low and high tech devices.
- Understand the characteristics and effects of oral and laryngeal cancer

Select an appropriate management procedures for patients with laryngectomy, glossectomy and mandibulectomy

Unit 1: Introduction to cleft lip and palate and Velopharyngeal closure -10 Hrs

- 1.1. Embryology – development of the palate, lip and nose
- 1.2. Causes – genetic, environmental and other causes
- 1.3. Types of cleft lip and palate and classification of cleft lip and palate
- 1.4. Velopharyngeal closure mechanism : Normal Physiology and types of normal closure

Unit 2: Velopharyngeal Dysfunction and Associated Problems - 12 Hrs

- 2.1 Velopharyngeal Dysfunction (VPD)
 - Definition, causes and classification
 - Effect of VPD on speech
 - Assessment of VPD: Subjective and objective methods.
 - 2.2 Associated problems
 - Communication disorders : language and hearing
 - Feeding, psychological, and dental problems
- Syndromes associated with cleft lip and palate

Unit 3: Assessment and Management of CLP -12 Hrs

- 3.1. Assessment of cleft lip/palate : Cleft palate protocols
- 3.2. Management of cleft lip and palate – surgery, speech therapy, prosthesis
- 3.3. Speech and language therapy for CLP: early intervention, therapy techniques to improve language, resonance to reduce compensatory articulation, to improve resonance and speech intelligibility

Unit 4: Introduction and types of oral and laryngeal cancer - 10 Hrs

- 4.1 Definition, Causes and symptoms
- 4.2 Types and characteristics
- 4.3 Total laryngectomy – definition, characteristics, associated problems
- 4.4 Types of glossectomy and mandibulectomy
- 4.5 Assessment of patients with laryngectomy, glossectomy, mandibulectomy
- 4.6 Pre and post-operative counselling

Unit 5: Management of Laryngectomy and glossectomy - 10 Hrs

- 5.1. Esophageal speech – anatomy, candidacy, different types of air intake procedure, speech characteristics in esophageal speech
- 5.2. Tracheo esophageal speech – anatomy, candidacy, different types of TEP, fitting of prosthesis, speech characteristics, complications in TEP
- 5.3. Artificial larynx – different types, selection of artificial larynx, ultra speech, speech characteristics
- 5.4. Gastric pull up – issues and management (added)
- 5.5. Glossectomy, mandibulectomy –management

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PRACTICUM

1. Shall know to use modified Striped y classification and administer to a client with repaired CLP and and unprepared CLP.
2. Administration of diagnostic articulation test for an individual with CLP and analysis using SODA, place, manner, voicing and to identify different types of compensatory articulation.
3. Perceptual of speech of CLP – nasality ,speech intelligibility and voice.
4. Be able to use Nasometer, Glatzel mirror and interpret the values.
5. Able to plan speech therapy goals and activities.
6. Perceptual analysis of speech samples of TEP, esophageal and artificial larynx
7. Shall know to use the TEP kit – insertion, removal of different types of prosthesis.
8. Shall know to use artificial larynx .
9. Submission of a report on a client with glossectomy/mandibulectomy

REFERENCES

Common to Units 1 to 3

- Bzoch, K. (Ed) (1989). Communicative Disorders Related to Cleft Lip And Palate. Boston: Little Brown Co.
- Falzone.P.,Jones.M.A.,& Karnell.M. P. (2001). Cleft Palate Speech. III Ed., Mosby , Inc
- Falzone.P.,Jones.M.A.,& Karnell.M. P. (2010). Cleft Palate Speech. IV Ed., Mosby , Inc
- Grabb, W.C., Rosenstein.S.W. , Bzoazch .K.R .,(1971) . Cleft Lip & Palate Surgical, Dental and Speech Aspects. Boston: Little Brown Co.
- Kummer. A.W. (2001). Cleft Palate And Craniofacial Anomalies. Singular Publishing. Canada
- Kummer. A.W. (2007). Cleft Palate And Craniofacial Anomalies: The Effects On Speech and Resonance. Singular Publishing. Thopson Learning.
- Mcwilliams, B.J. (1990). Cleft Palate Speech. Philadelphia: B.C. Decker.
- Spristersbach, D. (1968). Cleft Palate And Communication. New York, Academic Press.
- Moller Karlind & Glaze Leslie(Ed)(2009). Cleft Lip and Palate: Interdisciplinary Issues and Treatment, Pro Ed , Texas.

Unit 1

- Berkowitz (Ed) .,(1996). Cleft lip and Palate. San Diego, Singular Publishing Group.
- Brodsky & Others (1992). Craniofacial Anomalies, St. Louis, Mosby.
- Holdsworth (1963) . Cleft lip and Palate (IIIrd Ed) ,William Heinemann , London.
- Powers, G.R. (1986). Cleft Palate. Austin, Pro.Ed.
- Jaso Noemi., & Ana Maria D Cruz, (2013) . Cleft lip and Palate : Etiology , Surgery and Repair and Sociological Consequences , Nova Science Publisher , Inc
- Ross .R.B & Johnson M. C. (1972). Cleft Lip And Palate . Williams And Wilkins . Baltimore
- Spristersbach, D. (1968). Cleft Palate And Communication. New York: Academic Press.
- Stenglphofen, J. (Ed) (1993). Cleft Palate; The Nature of Remediation of Communication Problems. London, Whurr Publishers.
- Shprintzen . R. J . & Bardach . J . (1995). Cleft Palate Speech Management: A Multidisciplinary Approach. Mosby. Inc
- Wells, C. (1971). Cleft Palate and Its Associated Speech Disorders. New York, Mcgraw Hill.
- Wyszynski, D.F (2002). Cleft Lip and Palate: From Origin To Treatment, Oxford University Press

Unit 2

- Berkowitz (Ed) (1996)., Cleft Lip and Palate. San Diego, Singular Publishing Group.
- Edwards, M & Watson A.C.H (1980). Advances In Management of Cleft Palate London, Churchill, Livingston.
- Kahn, A. (2000). Craniofacial Anomalies: A Beginner's Guide For Speech Language Pathologists. Singular Publishing Group. California.
- Moller . T. K & Starr (1992) . Cleft Palate : Interdisciplinary Issues and Manage Ment ,Pro –Ed, Austin

B.ASLP ISS Scheme - 4 years programme

- Morley (1970). 7th Ed. Cleft Palate And Speech. Edinburgh, Livingstone.
- Rampp. D. L , Pannabacker M, Kinnebrew (1984). Velopharyngeal Incompetency : A Practical Guide For Evaluation And Management Pro –Ed , Austin .
- Spristersbach, D. (1968). , Cleft Palate And Communication. New York, Academic Press.
- Stenglphofen, J. (Ed) (1993). Cleft Palate: The Nature of Remediation of Communication Problems. London, Whurr Publishers.
- Stark, B. R (1968). Cleft Palate: A Multidisciplinary Approach. Haper & Row
- Stengelhofen. J. (1993). Cleft Palate: The Nature and Remediation Of Communication Problem Whurr Publishers Ltd .London.
- Shprintzen, R. J. & Bardach . J . (1995). Cleft Palate Speech Management: A Multidisciplinary Approach. Mosby. Inc.
- Wells, C. (1971). Cleft Palate and Its Associated Speech Disorders, New York, Mcgraw Hill.

Unit 3

- Berkowitz (Ed) (1996)., Cleft Lip and Palate. San Diego, Singular Publishing Group.
- Berkowitz. S. (2001). Cleft Lip and Palate: Perspectives in Management. Vol II. Singular Publishing Group. Inc.
- Edwards (1980). Advances in the Management of Cleft Palate. London, Churchill, Livingston.
- Falzone, P., Jones, M. A. & Karnell, M. P. (2001). Cleft Palate Speech. III Ed, Mosby Inc.
- Golding, K. J & Kushner (2001) Therapy Techniques For Cleft Palate Speech and Related Disorders, Delmar, Cengage Learning.
- Golding, K. J & Kushner (2004). Therapy Techniques For Cleft Palate Speech And Related Disorders, Singular Thompson Learning.
- Kahn.A. (2000). Craniofacial Anomalies: A Beginner's Guide For Speech Language Pathologists Singular Publishing Group. California.
- Morley (1970). 7th Ed. Cleft Palate And Speech. Edinburgh, Livingstone.
- Peterson, Falzone, Cardomone, Karnell (2006). The Clinician Guide To Treating Cleft Palate Speech. Mosby. Elsevier .
- Phippen Ginette (2014). Speech Therapy In Cleft Palate and Velopharyngeal Dysfunction, J & R Press Ltd.
- Rogers, Derek .J & Hamdan (2014). Video Atlas of Cleft Lip And Palate Surgery, PI; Ural Publishing, Sandiego.
- Thomas C. Charles Shprintzen.R.J. & Bardach, J. (1995). Cleft Palate Speech Management: A Multidisciplinary Approach. Mosby. Inc.
- Stenglphofen, J. (Ed) (1993). Cleft Palate; The Nature of Remediation Of Communication Problems. London; Whurr Publishers, London
- Watson, A. C. H., Sell. D. A & Grunwell P. (2001). Management Of Cleft Lip and Palate. Whurr Publishers Ltd .London.
- Wells, C. (1971). Cleft Palate And Its Associated Speech Disorders. New York, Mcgraw Hill.
- Westlake & Rutherford,F. (1966). Cleft Palate. Englewood, Prentice-Hall.

Laryngectomy and Oral Cancer - Unit 4

- Diedrich, W.M. & Youngstorm, K.A. (1966). A Laryngeal Speech Springfield, Charles C Thomas.
- Doyle, P.C. (1994).Foundation of Voice And Speech Rehabilitation Following Laryngeal Cancer. San Diego, Singular Publishing Group.
- Green, M.C.L. (1980). Voice And Its Disorders. 4th Ed. Kent: Pitman Medical Limited.
- Keith, R.L. & Darley. (1986). Laryngecto-mee Rehabilitation. III Ed. Autism, Pro.Ed.
- Salmon, S.J. & Mount, K.H. (Ed) (1991). Alaryngeal Speech Rehabilitation. Austin, Pro. Ed.
- Snidecor, J.C. (1968). Speech Rehabilitation of The Laryngectomised. 2nd Ed. Spring-field.
- Yvonne, E (Ed) (1983). Laryngectomy. Diagnosis to Rehabilitation. London, Croom,Helmltd.

Unit 5

- Case, J.L. (1991): Clinical Management of Voice Disorders, Pro-Ed, Austin.
- Casper. K . J. & Colton R. H (1998). Clinical Manual For Laryngectomy and Head / Neck Cancer Rehabilitation. Sandiego. London.

B.ASLP ISS Scheme - 4 years programme

- Edles, Y. (1983). Laryngectomy. Croom Helm, London.
- Fawcus, M. (Ed.) (1991). Voice Disorders and Their Management. Singular Publishing. Group. San Diego.
- Salmon, S.J. & Mount, K.H. (Eds.) (1991). Alaryngeal Speech Rehabilitation. Pro-Ed. Austin.
- Keith, R L & Darley (III Ed). Laryngectomee Rehabilitation. Pro. Ed.Austin
- Prater, R.J. & Swift, R.W. (1984). Manual of Voice Therapy. Boston: Little Brown and Co
- Salmon, S.J. & Mount, K.H. (Ed) (1991). Alaryngeal Speech Rehabilitation. Austin: Pro. Ed.
- Salmon, J & Shriley (1999). Alaryngeal Speech Rehabilitation For Clinicians and by Clinicians Pro Ed, Austin.
- Skelly (1974). Glossoectomee: Speech Rehabilitation. Springfield: Charles C Thomas.
- Snidecor, J.C. (1968). Speech Rehabilitation of the Laryngectomised. 2nd Ed. Springfield, Charles C Thomas.
- Yvonne, E (Ed) (1983). Laryngectomy: Diagnosis to Rehabilitation. London, Croom Helm Ltd.

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PAPER: PHONOLOGICAL DISORDERS

Objectives:

After the course the student should be able to

- Describe the articulatory features of all speech sounds and the stages of phonological development.
- Describe the development of test materials and the acoustic characteristics of vowels and consonants.
- Differentiate between articulation and phonological disorders and know the various causes.
- Carry out assessment of articulation and phonological disorders and aware of the recent test materials.
- Carry out various types of therapy approaches based on the client requirements and use various instruments and softwares available for assessment and therapy

Unit 1: Basic Concepts of phonology - 12 Hrs

- 1.1 Definition of articulation, Phonology, Phonetics, place and manner of articulation of different speech sounds, cardinal vowels, secondary cardinal vowels, secondary articulation, combinatory phonetics.
- 1.2 Phonological development: Stages and Theories of prelinguistic development

Unit 2: Distinctive features and acoustic features - 10 Hrs

- 2.1 Factors affecting the development of articulation
- 2.2 Distinctive features – different systems and implications
- 2.3 Material development to study articulatory behavior
- 2.4 Acoustics of vowels and consonants

Unit 3: Misarticulation and Phonological Disorders - 12 Hrs

- 3.1 Definition, epidemiological findings, incidence and prevalence
- 3.2 Causes – sensory, structural, motor and neurological causes
- 3.3 Types of misarticulation – lispings, rhotacism – definition, types and characteristics.
- 3.4 Differential diagnosis of misarticulation, SSD and phonological disorders
- 3.5 Articulatory and prosodic problems associated with hearing impairment, dysarthria, cerebral palsy and mental retardation.

Unit 4: Assessment of articulation and phonological disorders -10 Hrs

- 4.1 Assessment (i) Modes of testing (ii) Classification of articulation tests (iii) Recent advances in Assessment

Unit 5: Rehabilitation of articulation and phonological disorders -10 Hrs

Articulation therapy techniques

- 5.1 Definition and stages of articulation therapy – sequence of therapy – MIDVAS
- 5.2 Motoric approaches – progressive approximation, integral stimulation, motokinesthetic approach, phonetic placement, multiple phoneme approach, traditional therapy, programmed conditioning therapy, sensory motor therapy, PROMPT, Core Vocabulary Approach
- 5.3 Linguistic approaches – distinctive feature therapy, minimal pair therapy, language based therapy, Metaphone therapy, PACT
- 5.4 Instrumentation including softwares (VAGHMI, Dr. Speech etc)

PRACTICUM

Unit 1:

- Perceptual analysis of normal articulation in five subjects
- Administration of articulation tests to five subjects
- Measurement of speech intelligibility in five subjects

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- Measurement of oral sensory perception in five subjects
- Measurement of nasality in five subjects
- Assessment of auditory discrimination
Visualization of glottal spectra, and speech spectra for /a/, /i/, /u/
- Measurement of formant frequencies, VOT, closure duration, burst duration and vowel duration
- Submission of practical record

Unit 2:

- Evaluation of two clients with phonological disorder
- Use appropriate instruments for diagnosis and rehabilitation of phonological disorders
- Use of softwares for evaluation
- Preparation of home training material for phonological disorder
- Pattern analysis of speech sample of a client with phonological disorder
- Counseling the client/parent with phonological disorder
- Administration of articulation test on one normal and one disordered client with phonological disorders
- Submission of practical record

REFERENCES

- Bauman-Waengler, J. (2012). *Articulatory and Phonological Impairments: A Clinical Focus* 4th ed. Boston: Pearson Education
- Bernthal, J.E. & Bankson, Nicholas W. Flipsen(2009) *Articulation and Phonological Disorders: Speech Sound Disorders in Children* ,6th ed. Boston, Pearson Education.
- Carrell, J.A. (1968). *Disorders of articulation*. Van Riper series. New Jersey; Prentice Hall: Foundation of speech pathology series.
- Klein, E.S. (1996). *Clinical phonology*. San Diego: Singular Publishing Group.
- McReynolds, L. & Engmann, D. (1976). *Distinctive feature analysis of misarticulation*. Baltimore: University Park Press.
- Stoel-Gammon (1985). *Normal and disordered phonology in children*. Austin: Pro-Ed.
- Van Riper, C. & Irwin, J.V. (1958). *Voice and articulation*. New Jersey: Prentice Hall Inc.
- Yavas, M. (1998). *Phonology development and disorders*. San Diego: Singular Publishing Group.

Unit 1:

- Ball, M. J. (2004). *Phonetics for speech Pathology*. 2nd ed. London. Whurr Publishers Ltd
- Bauman-Waengler, J. (2012). *Articulatory and Phonological Impairments: A Clinical Focus* 4th ed. Boston : Pearson Education – Chapters 1- 5
- Bernthal, J.E. & Bankson, Nicholas W. Flipsen (2009) *Articulation and Phonological Disorders: Speech Sound Disorders in Children*,6th ed. Boston, Pearson Education. Chapters 1- 3
- Edwards, H T. (2003). *Applied Phonetics: Sounds of American English*. 3rd Edn. Delmar, Singular.- Chapter 1, 3 to 13.
- Ladefoged & Maddison (2008). *The sounds of worlds languages*. Cambridge, Blackwood Publisher Inc
- Mackay (1987). *Phonetics: The science of speech production*, 2nd ed. Boston, College Hill Publisher – *for combinatory phonetics*
- Malmberg (1963). *Phonetics*. NY: Dover Publication Inc. – *for combinatory phonetics*
- Pena Brooks, A. & Hegde, M N (2000). *Assessment and treatment of Articulation and phonological disorders in children: A dual level text*. Austin: Texas, pro.ed – Chapters 2 & 3.

Unit 2:

- Deepa Anand (2010). Restandardization of Kannada Articulation test. Dissertation submitted to All India Institute of Speech and Hearing , MYSORE
- Hanson (1983). *Articulation*. Philadelphia: Saunders

B.ASLP ISS Scheme - 4 years programme

- Bauman-Waengler, J. (2012). Articulatory and Phonological Impairments: A Clinical Focus 4th ed. Boston : Pearson Education
- Kent, R.D. & Read, C. (2002). The Acoustic analysis of speech, 2nd Ed. Delmar, Singular Publisher.
- Lowe, R.J. (1994). Phonology. Baltimore: Williams and Wilkins.
- Pickett, J M. (1980). The sounds of speech communication: A primer of acoustic phonetics and speech perception. Boston, Allyn and Bacon
- Raphael, L J., Borden, G. J. & Harris,(2011). Speech Science Primer. 6th ed. Baltimore. Lippincott Williams & Wilkins
- Rohini H. (1989) Deep Test of Articulation in Kannada Sentence form. Dissertation submitted to All India Institute of Speech and Hearing , MYSORE
- Singh, S. (1970). Distinctive features. Baltimore: University Park Press.

Unit 3:

- Aronson, Arnold E. Brown, Joe R. Darley, Frederic L.(1975). Motor Speech Disorders, Philadelphia W.B. Saunders Company.
- Ball, M.J. & others (1996). Phonetic transcription of disordered speech.San
- Bleile, K.M. (2004). Manual of articulation and phonological disorders.Delmar: Centage Learning Diego: Singular Publishing Group.
- Darby et. al (1969). Different diagnostic patterns of dysarthria, JSHR, Vol 12, 2.
- Espir & Rose (1981). The Basic Neurology of Speech. Oxford, Blackwell Scientific Publications
- Elbert, & Gierut (1986). Handbook of clinical phonology. London: Taylor & Francis.
- Fletcher (1992). Articulation.San Diego: Singular Publishing Group.
- Ingram, D. (1990). Phonological disability in children.London: Whurr Publisher.
- Lowe, R.J. (1994). Phonology. Baltimore: Williams & Wilkins.
- Lushinger & Arnold (1965). Voice– Speech – Language. Belmont. Wadsworth Publishing Company – For lispism and rhotacism

Unit 4:

- Bernthal, J.E. & Bankson, Nicholas W. Flipsen(2009) Articulation and Phonological Disorders: Speech Sound Disorders in Children, 6th ed. Boston, Pearson Education. Chapter 5
- Bleile, K.M. (2004). Manual of articulation and phonological disorders. Delmar: Centage Learning
- Gordon- Brannan & Weiss, C E. (2007). Clinical Management of Articulatory and phonological disorders. 3rd ed. Baltimore. Lippincott Williams & Wilkins . Chap- 6-7
- Pena Brooks, A. & Hegde, M. N. (2000). Assessment and treatment of articulation and phonological disorders in childrenAustin: Texas, pro.ed–Chapter 6.
- Proceedings of National workshop on Phonological Disorders: Clinical Perspectives. 6.1.2012, AIISH- Available in AIISH Library

Unit 5:

- Ball, M J. & Code, C. (1997). Instrumental clinical phonetics. London, Whurr Publisher
- Bernthal, J.E. & Bankson, Nicholas W. Flipsen (2009). Articulation and Phonological Disorders: Speech Sound Disorders in Children, 6th ed. Boston, Pearson Education. Chapters 6-7
- Fletcher (1992). Articulation. San Diego: Singular Publishing Group.
- Gordon- Brannan & Weiss, C E. (2007). Clinical Management of Articulatory and phonological disorders. 3rd ed. Baltimore. Lippincott Williams & Wilkins. Chap 8-9
- Howell & Dean, E. (1995). Treating phonological disorders in children. London: Whurr Publishers
- Ingram, D. (1990): Phonological disability in children. London: Whurr Publisher.
- Johnson, J.P. (1980). Nature and treatment of articulation disorders.Springfield: Charles C Thomas.
- Brooks, A. & Hegde, M N (2000). Assessment and treatment of articulation and phonological disorders in children: A dual level text. Austin: Texas, pro.ed– Chapters 7 & 8.

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PAPER : DIAGNOSTIC AUDIOLOGY: BEHAVIORAL TESTS

Objectives

After completing this course, candidate should be able to

1. Design individualized test battery for assessing cochlear pathology, retrocochlear pathology, functional hearing loss, CAPD, vestibular dysfunctions, tinnitus and hyperacusis
2. Independently run the tests and interpret the results to identify the above conditions and also use the information for differential diagnosis
3. Make adjustments in the test parameters to improve sensitivity and specificity of tests.
4. Make appropriate diagnosis based on the test results and suggest referrals

Unit 1: overview about behavioral diagnostic tests - 10 Hrs

- 1.1 Introduction to diagnostic audiology: characteristics of a diagnostic test, difference between screening and diagnostic test, functions of a diagnostic test in Audiology
- 1.2 Need for test battery approach in auditory diagnosis and integration of results of audiological tests, cross-check principle
- 1.3 Concept of clinical decision analysis (sensitivity, specificity, true positive, true negative, false positive, false negative, and hit rate)
- 1.4 Definition of behavioral and physiological tests and their characteristics in diagnostic audiology
- 1.5 Theories and physiological bases of recruitment
- 1.6 Theories and Physiological bases of auditory adaptation
- 1.7 Clinical Indications for administering audiological tests to identify cochlear pathology
- 1.8 Clinical Indications for administering audiological tests to identify retrocochlear pathology

Unit 2: Cochlear and retrocochlear pathology – 10 hrs

- 2.1 Tests to identify cochlear and retrocochlear pathology
 - ABLB, MLB
 - SISI and its variants
 - STAT, TDT and its modification
 - Bekesy audiometry
 - Brief tone audiometry
 - PIPB function
 - HINT, QuickSIN
 - Glycerol test
 - Psychoacoustic tuning curves
 - Test to identify dead regions of cochlea (Psychophysical Tuning Curves, TEN HL test)

Unit 3: Pseudohypacusis - 10 Hrs

- 3.1 Tests to diagnose Functional hearing loss
 - Behavioral and clinical indicators of functional hearing loss
 - Pure tone tests including tone in noise test, Stenger test, BADGE, Puretone DAF
 - Speech tests including Lombard test, Stenger test, lip-reading test, Doerfler-Stewart test, Low level PB word test, Yes-No test, DAF test
 - Identification of functional hearing loss in children: Swinging story test, Pulse tone methods
 - Psycho-social aspects related to pseudohypacusis

Unit 4: Central auditory processing disorders - 12 Hrs

- 4.1 Central auditory processing: definition, different behavioral processes
- 4.2 Behavioral and clinical indicators of central auditory processing disorders Bottle neck and subtlety, redundancy principles and their clinical interpretations.
- 4.3 Screening techniques for CAPD

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4.4 Tests to detect central auditory processing disorders

- Monoaural low redundancy tests - Filtered speech tests, Time compressed speech test, Speech-in-noise test, SSI with ICM,
- Dichotic speech tests – Dichotic digit test, Staggered spondaic word test, Dichotic CV test, SSI with CCM, Competing sentence test,
- Binaural interaction tests – RASP, BFT, SWAMI, and MLD
- Tests of Temporal processing – Pitch pattern test, Duration pattern tests, Gap detection test, TMTF
- Screening test for auditory processing
- Overview about CAPD in older adults
- Review of CAPD tests with reference to site of lesion (Brainstem, cortical, hemispheric and interhemispheric lesion)

4.5 Diagnostic criteria for CAPD as per ASHA (2005) and AAA (2010)

4.6 Variables influencing the assessment of central auditory processing

- Procedural variables
- Subject variables

Unit 5: Vestibular and tinnitus assessment -10 Hrs

5.1 Vestibular assessment

- Overview of balance functioning
- Overview of nystagmus, giddiness, vertigo
- Behavioral tests to assess vestibular functioning (Fukuda stepping test, Tandem gait test, Finger nose pointing, Romberg test, sharpened Romberg test, head thrust test and head impulse test)

5.2 Tests to assess Tinnitus and Hyperacusis

- Overview of Tinnitus and Hyperacusis
- Pitch matching, loudness matching, residual inhibition, Feldmann masking curves
- Johnson Hyperacusis Dynamic Range Quotient

PRACTICUM

Learning to administer behavioural tests used for differential diagnosis of cochlear and retro cochlear pathology (ABLB, MLB, SISI, TDT, STAT, Bekesy audiometry, Brief tone audiometry, and PIPB function)

1. Learning to administer behavioural tests used for vestibular disorders
2. Learning to administer behavioural tests used for tinnitus evaluation
3. Learning to administer behavioural tests used for functional hearing loss (Lombard test, Stenger test, Doefler-Stewart test, Tone-in noise test, and lip reading test)
4. Administration of pure-tone audiometry and speech audiometry on clients, including masking whenever indicated
5. Establishment of UCL, MCL and dynamic range in clients
6. Interpretation of results of pure tone audiometry and speech audiometry
7. Generation of amplitude modulated, Frequency modulated signal
8. Observation, familiarization, and Administration of central auditory processing disorders: two tests from each domain (Monoaural low redundancy tests; Dichotic speech tests; Binaural interaction tests; Temporal ordering tests; and Temporal Resolution tests)

REFERENCES

Common to all units

- Hall, J. W. (2014). Introduction to Audiology Today. Pearson Education, Inc.
- Hall, J. W. & Mueller, H.G. (1997). Audiologists' desk reference volume 1: Diagnostic audiology principles: Procedures and protocols. San Diego: Singular Publishing Group.
- Jerger, S. & Jerger, J. (1981). Audiological disorders: A manual for clinical evaluation. Boston: Little Brown Co.
- Katz, J.(1985). Handbook of clinical audiology (3rd Ed).Baltimore: Williams & Wilkins.

B.ASLP ISS Scheme - 4 years programme

- Katz, J. (2009). Handbook of clinical audiology (6th Ed). Baltimore: Williams & Wilkins.
- Katz, J., Chasin, M., English, K., Hood, L. J. (2015). Handbook of clinical audiology (7th Ed). Baltimore: Williams & Wilkins.
- Martin, F.N. (1994). Introduction to audiology. New Jersey: Prentice Hall.
- Moller, A. R. (2013). Hearing: Anatomy, physiology, and disorders of the auditory system. San Diego, CA, Plural Publishing, Inc.
- Musiek, Baran, Shinn, and Jones (2012). Disorders of the auditory system. San Diego, Plural Publishing.
- Rintleman, W.F. (1991). Hearing assessment. Boston: Allyn & Bacon.
- Roser, R.R., Valente, M & Hosford-Dunn, D (2000). Audiological diagnosis. New York: Thieme.
- Silman, S. & Silverman, C.A. (1997). Auditory diagnosis: Principles and applications. New York: Academic Press.
- Stach, B. A. (2010). Clinical Audiology: An introduction (2nd Ed). Delmar, Cengage Learning.

Unit 1 & 2:

- Alford, B.R. & Jerger, S. (1993). Clinical Audiology: The Jerger perspective. San Diego: Singular Publishing Group Inc.
- Moore, B. C. J. (1995). Perceptual consequences of cochlear damage. Oxford University Press.
- Moore, B. C. J. (1997). An introduction to the psychology of hearing (4th Ed). London: Academic press.
- Moore, B. C. J. (1998). Cochlear Hearing loss: London, Whurr Publishers.

Unit 3:

- Gelfand, S. A. (2009). Essentials of Audiology. Thieme Medical Publishers, New York.
- Peck, J. E. (2011). Pseudohypacusis: False and exaggerated hearing loss. San Diego: Singular Publishing Group Inc.

Unit 4:

- Bellis, T.J. (1996). Assessment and management of central auditory processing disorders in educational setting: From science to practice. San Diego: Singular Publishing Group Inc.
- Chermak, G.D. & Musiek, F.E. (2014). Handbook of central auditory processing disorders, Volume 1 (2nd Ed): Auditory Neuroscience and diagnosis. San Diego: Plural Publishing
- Chermak, G.D. & Musiek, F.E. (1997). Central auditory processing disorders: New perspectives. San Diego: Singular Publishing Group Inc.
- Geffner, D., & Ross-Swain, D. (2013). Auditory processing disorders: Assessment, management, and treatment (2nd Ed). San Diego, Plural Publishing.
- Parthasarathy, T. K. (2008). *An Introduction to Auditory Processing Disorders in Children*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Willeford, J.A. (1987). Handbook of central auditory processing disorder in children. Orlando: Grune and Stratton.

Unit 5:

- Bennett, S. E., & Karnes, J. L. (1998). Neurological disabilities: Assessment and treatment. Lippincott, Williams and Wilkins.
- Desmond, A. L. (2011). Vestibular Function: clinical and practice management. Thieme Medical Publishers, New York.
- Jacobson, G. P., & Shepard, N. T. (2008). Balance function assessment and management. San Diego: Plural publishing group.
- Baguley, D., Gerhard, A., Don, M., & Laurence, M. (2013). Tinnitus: A multidisciplinary approach. Wiley Blackwell, East Sussex.
- Mooler, A. R., Langguth, B., DeRidder, D., Kleinjung, T. (2011). Textbook of Tinnitus. Springer, New York.
- Sataloff, R. T (2007). Tinnitus. San Diego.

B.ASLP ISS Scheme - 4 years programme

- Tyler, R. S. (2000). *Tinnitus Handbook*. Singular publishing group, San Diego,
- Vernon, J. A., & Moller, A. R. (1995). *Mechanisms of tinnitus*. Allyn and Bacon, Boston.
- Weber, P. C. (2008). *Vertigo and disequilibrium: A practice guide to diagnosis and management*. Thieme Medical Publishers, New York.

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PAPER: EDUCATIONAL AUDIOLOGY

Objectives: After completing the course the students should be able to:

- Explain the effects of hearing loss on development and learning
- Analyze the client scenarios and decide the intervention approaches for children with hearing impairment in the school
- Select appropriate educational placement for the child with hearing impairment
- Apply principles of effective management in classroom/school set-up
- Explain the role of educational agencies and legal policies for children with disability in India

Unit 1: Importance of early identification and different approaches for communication -12 Hrs

- 1.1 Classification of hearing impairment and its importance in educational placement
- 1.2 Role and responsibilities of Educational Audiologist and team members
- 1.3 Early identification and its importance in aural rehabilitation.
- 1.4 Unisensory vs. multisensory approach
- 1.5 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)
- 1.6 Total communication

Unit 2: Methods of teaching language for children with Hearing impairment - 10 Hrs

- 2.1 Methods of teaching language to the hearing impaired and its application in Indian languages
- 2.2 Natural method: maternal reflective method, Groth's method
- 2.3 Structured method (grammatical method); Fitzgerald key, box technique APPLE TREE, Patterning
- 2.4 Combined method (Natural and structured)
- 2.5 Computer aided method

Unit 3: Educational placement - 12 Hrs

- 3.1 Educational placement of hearing impaired children:
 - Preschool training, Integration, Partial integration, Segregation: day school vs. residential school, Inclusive vs intergrated school
- 3.2 Criteria for recommending the various educational placements
- 3.3 Criteria for selecting the medium of instruction
- 3.4 Factors affecting their outcome.
- 3.5 Setting-up classrooms and the modifications for the individuals with hearing impairment
 - Acoustics, lighting, class strength and amplification and personal and group amplification devices

Unit 4: Educational problems and counsel-ing parents -10 Hrs

- 4.1 Educational problems of the individuals with hearing impairment and the measures taken to overcome the problems in India
- 4.2 Counseling the parents, teachers and peers regarding the education of the individuals with hearing impairment in India
- 4.3 Home training – need, preparation of lessons, long term vs short term plans and activities, correspond-ence programs, follow-up

Unit 5: Laws and policies for education -10 Hrs

- 5.1 Educational laws and policies with respect to education for children with disability by government and non-government agencies
 - Recommendations of PWD and UNCRPD for education, Rehabilitation Council of India Act (1992), Persons with Disabilities Act (1995), Right to Education Act

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(RTE), IEDC Scheme 1992, DPEP scheme, Salamanca statement and Framework for Action on Special Needs Education (1994), Kothari Commission (1992), Rights of disabled, Sarva Siksha Abhiyan

5.2 Education for children with multiple disabilities

PRACTICUM

1. Prepare schedules for educational placement of 5 children with hearing impairment having different hearing capacities
2. Counsel parents regarding educational placement of the hearing impaired.
3. To prepare a model of an integrated classroom considering the factors affecting integration
4. To visit a school for children with special needs and note down the available facilities and the steps to be taken to modify the same

REFERENCES

Common to all units

- Davis, J.M. & Hardick, E.J. (1981). Rehabilitative audiology for children and adults. New York: John Wiley & Sons.
- Lynas, W. (2000). Communication options. In J. Stokes (Ed). Hearing impaired infants – Support in the first eighteen months. London: Whurr Publishers Ltd.
- Ross, M., Brackett, D. & Maxon, A.B. (1991). Assessment and management of mainstreamed hearing-impaired children: Principles and practice. Austin: Pro. Ed.
- Sanders, D.A. (1993). Management of hearing handicap: Infants to elderly. 3rd Ed. New Jersey: Prentice Hall.
- Sims, L.G., Walter, G.G. & Whitehead, R.L. (1981). Deafness and communication: Assessment and training. Baltimore: Williams and Wilkins.
- Tucker, I & Nolan, M. (1984). Educational audiology. Chapter 10. London: Croom Helm.

Unit 1:

- Alpiner, J.G. (1982). Handbook of adult rehabilitative audiology. Baltimore: Williams & Wilkins.
- Borastein, H. (1977). Systems of sign. In L.J. Bradford & W.G. Hardy (Eds). Hearing and hearing impairment. New York: Grune and Stratton Inc.
- Chermak, G.D. (1981). Handbook of audiological rehabilitation. C.C. Thomas
- Ebbin, J.B (1974). Critical age inhering. In C.Griffiths (Ed). Proceeding of the International Conference on Auditory Techniques. Illinois: Charles C Thomas.
- Griffiths, C. (1974). Early identification – plus the auditory approach. In C. Griffiths (Ed). Proceeding of the International Conference on Auditory Techniques. Illinois: Charles C Thomas
- Hull, R.H. (Ed) (1982). Rehabilitative Audiology. New York: Grune and Stratton Inc.
- Northern, J.L., & Downs, M.P. (1991). Hearing in children. 4th Edn. Baltimore, MD: Williams and Wilkins.
- Peter, V. Paul. (2009). Language and Deafness. (Ed). Sudbury, MA: Jones & Bartlett Learning.
- Indian Sign Language Dictionary (2002). Sri Ramakrishna Mission Vidhyalaya. International Human Resource Development Centre (IHRDC) for the disabled, Coimbatore. A project supported by CBM international, Germany.

Unit 2:

- Fitzgerald, E. (1929). Straight language for the deaf. McClure.
- Fitzgerald, E. (1976). Straight language for the deaf. Washington, DC: Alexander Graham Bell Association for the Deaf.
- Jackson, A. (1981). Ways and means-3. Hearing impairment a resource book of information, technical aids, teaching material and methods used in the education of hearing impaired children. Hong Kong: Somerset Education Authority.

B.ASLP ISS Scheme - 4 years programme

Stephen D. Krashen, & Tracy D. Terrell (1996). *The Natural Approach: Language acquisition in the classroom*. Bloodaxe Books Ltd; Janus Book Pub/Alemany Press.

Tebbs, T. (1978). *Ways and means: A resource book of aids, methods, materials, materials and systems for use with the language retarded child*. Hong Kong: Somerset Education Authority.

Unit 3:

Nix, G.W. (1976). *Mainstream education for hearing impaired children and youth*. New York: Gruneand Stratton Inc.

Ross, M., Brackett, D. &Maxon, A.B. (1991). *Assessment and management of mainstreamed hearing impairment children: Principles and practice*. Austin: Pro. Ed.

Webster, A. & Ellwood, J. (1985). *The hearing impaired child in the ordinary school*. London: Croom Helm.

Unit 4 & 5:

Cheryl, J., & Jane, S. (2011). *Educational Audiology Handbook, Edition 2*, Publisher Cengage Learning.

Correspondence program for Parents of the Deaf, John Tracy Clinic.

Madhumita, P., & George, A. (2004). *Handbook of Inclusive Education for Educators, Administrators and Planners.*, Publisher SAGE.

Umesh, S., & Joanne. D. (2005). *Integrated Education in India: Challenges and Prospects*. *Disability Studies Quarterly*, Winter, Volume 25, No. 1.

The Standard Rules of the United Nations (1996). *An easy to read version of the Standard Rules on the equalization of opportunities for persons with disabilities*. Stockholm: Kitte Arvidsson & Easy-To-Read Foundation.

UNESCO (1972) *Learning to Be* (prepared by Faure, E. et al), Paris: UNESCO

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PAPER: OTORHINOLARYNGOLOGY

Objectives:

At the end of the course, the students should know the diseases of Ear, Nose & throat causing various communication disorders.

Unit 1: Otology -10 Hrs

- 1.1 Diseases of the external, middle and inner ear leading to hearing loss – congenital malformations, traumatic lesions, infections and Neoplastic Lesions

Unit 2: Otology -15 Hrs

- 2.1 Other causes of hearing loss – facial paralysis, tumors of the cerebello-pontine – angle, acoustic neuroma.
- 2.2 Otosclerosis, Vertigo, Tinnitus, Sudden Sensory Neural Hearing Loss (SSNHL)

Unit 3: Nose, PNS (Paranasal Sinuses) & Oral cavity -10 hrs

- 3.1 Causes of speech disorders – diseases of the mouth, tumours of jaws and oral cavity, nasopharynx and pharynx, pharyngitis, diseases of tonsils and adenoids
- 3.2 Ankyloglossia, Hypo Nasality and Hyper Nasality

Unit 4: Laryngology -15 hrs

- 4.1 Congenital diseases of larynx – differences between an infant and an adult larynx,
- 4.2 Stridor in Infants and Adults, Vocal cord paralysis
- 4.3 Benign lesions of Larynx
- 4.4 Malignancies of Larynx
- 4.5 Laryngial trauma and Stenosis
Laryngectomy and Voice rehabilitation

Unit 5: Oesophagus and related disorders -4 hrs

- 5.1 Oesophagus – Congenital anomalies
- 5.2 Neoplastic lesions of Oesophagus
- 5.3 Phonosurgery

REFERENCES

Unit 1-5

- Diseases of Ear, Nose, Throat and Head and Neck Surgery By: P.L. Dhingra (6th Edition)
The text book of Ear, Nose, Throat and Head and neck surgery P Hazarika
Diseases of Ear nose and Throat: by Logan Turner
Scott-Browns – Otorhinolaryngology and Head & Neck Surgery

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Semester IV

PAPER: FLUENCY AND ITS DISORDERS

Objectives

At the end of the course the student should be able to

- Understand the normal aspects of fluent speech with respect to various parameters
- Differentiate normal and stuttering-like disfluencies
- Make a comprehensive evaluation and differential diagnosis in children and adults with various types of fluency disorders
- Measure rate of speech and severity of stuttering in children and adults
- Provide counseling and guidance to individuals with fluency disorders and their parents/caregivers

Unit 1: Fluency and its aspects -10 Hrs

- 1.1. Fluency: definition, development of factors influencing fluency
- 1.1 Definitions of intonation, rhythm, stress – development of intonation, rhythm, stress – their implications to therapy
- 1.2 Evaluation of fluency
 - Other prosodic features in fluency disorders.
- 1.3 Fluency/disfluency/Dysfluency Speech naturalness based on fluency parameters

Unit 2: Characteristics of Stuttering and its development - 10 Hrs

- 2.1 Stuttering characteristics
 - Definition, epidemiological findings, prevalence and incidence
 - Stuttering: block, nature of Stuttering,
 - Consistency, adjacency and Lee effect
 - situational variability
 - stuttering and heredity
- 2.2 Normal non-fluency primary stuttering – secondary stuttering
- 2.3 Development of stuttering
 - Bloodstein's phases, Van Riper's tracks, Conture's classification, development of stuttering throughout life

Unit 3: Theories and assessment of stuttering - 12 Hrs

- 3.1 Introduction to theories of stuttering – organic vs. functional
 - Cerebral dominance
 - Diagnosogenic theory
 - Learning theories
 - Demands – capacities model
- 3.2 Brief overview of recent theoretical advances
 - Covert repair hypothesis
 - EXPLAN theory
 - Neuroscience model
 - Communication – Emotional model
- 3.3 Assessment of stuttering and associated problems
 - Tools for assessment of stuttering
 - Multi-dimensional nature of assessment
 - Tools for assessment of quality of life -OASES
 - Differential diagnosis of developmental stuttering from normal nonfluency

Unit 4: Management of stuttering – 12 hrs

- 4.1 Therapy for stuttering -Stuttering modification and Fluency shaping approaches and their rationale
 - Prolongation

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- Shadowing
 - Habit rehearsal techniques
 - DAF
 - Masking
 - Desensitization
 - Time out and Response cost
 - Air flow and modified air flow
- 4.2 Steps/Sequence of therapy
- MIDVAS
 - Establishment, transfer and maintenance
- 4.3 Direct/Indirect approaches
- 4.4 Relapse and recovery from stuttering
- 4.5 measurement of therapy progress
- naturalness rating
- 4.6 Preventive, Prescriptive and Comprehensive treatment program
- Lidcombe program,
 - Camperdown program
 - Use of analogies
- 4.7 Counselling
- 4.8 Group therapy

Unit 5: Other Fluency disorders -10 Hrs

Definition, causes, characteristics, associated problems, assessment procedure and management techniques of:

- 5.1 Cluttering
- 5.2 Neurogenic stuttering/SAAND
- 5.3 Psychogenic stuttering
- 5.4 Differential diagnosis of different fluency disorders

PRACTICUM

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. Familiarity with tests of intonation, rhythm and stress

Unit 2:

1. Analysis of disfluency of one client with 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 persons with fluency disorders
5. Submission of therapy report of 2 persons with fluency disorders
6. Counseling of 2 persons with fluency disorders
7. Transcription and analysis of speech sample of a persons with fluency disorder using IPA
8. Preparation of audio visual and public education pamphlet on fluency disorder
9. Assessment of a person with fluency disorder on standard test for fluency assessment (SSI, SPI).
10. Listening to the speech samples of at least one person with cluttering, neurogenic and other varieties of fluency disorders

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REFERENCE

Unit 1:

- Starkweather, D. (1981). Speech fluency and its development in normal children. In N. Lass (Ed.), *Speech and Language: Advances in basic research and practice* (Vol. 4). New York: Academic Press.
- Starkweather, D. (1987). *Fluency and stuttering*. New Jersey: Prentice-Hall.

Unit 2

- Bloodstein, O., & Ratner, N. B.(2008). *A handbook on stuttering* (6th Ed.). Clifton Park, NY: Thomson Demer Learning.
- Conture, E.G. (2001). *Stuttering: its nature, diagnosis and treatment*. Boston, Allyn & Bacon.
- Curlee & Perkins (1985). *Nature and treatment of stuttering*. (Ed) London: Taylor & Francis.
- Guitar, B. (2014). *Stuttering-An integrated approach to its nature and treatment*. 4th Ed. Lippincott Williams and Wilkins, Baltimore.
- Manning, W. H. (2010). *Clinical decision making in Fluency disorders*. 3rd Ed. Delmer, Cengage learning.
- St. Louis (1986). *Atypical stuttering*. Orlando: Academic Press.
- Van Riper, C. (1982). *Nature of stuttering*. 2nd Ed. New Jersey: Prentice HallInc.
- Yairi, E & Seery, C.H. (2015). *Stuttering-Foundations and clinical applications* 2nd Ed. Pearson Education, Inc, USA.

Unit 3

- Bloodstein, O., & Ratner, N. B.(2008). *A handbook on stuttering* (6th Ed.). Clifton Park, NY: Thomson Demer Learning.
- Bothe, A.K. (2004). *Evidence-based treatmentr of stuttering*. Mahwah, NJ: Earlebaum Associates Inc.
- Curlee & Perkins (1985). *Nature and treatment of stuttering*. (Ed). London: Taylor & Francis.
- Guitar, B. (2014). *Stuttering-An integrated approach to its nature and treatment*. 4th Ed. Lippincott Williams and Wilkins, Baltimore.
- Manning, W. H. (2010). *Clinical decision making in Fluency disorders*. 3rd Ed. Delmer, Cengage learning.
- Van Riper, C. (1982). *Nature of stuttering*. 2nd Ed. New Jersey: Prentice HallInc.
- Yairi, E & Seery, C.H. (2015). *Stuttering-Foundations and clinical applications* 2nd Ed. Pearson Education, Inc, USA.

Unit 4:

- Bloodstein, O., & Ratner, N. B.(2008). *A handbook on stuttering* (6th Ed.). Clifton Park, NY: Thomson Demer Learning.
- Bothe, A.K. (2004). *Evidence-based treatmentr of stuttering*. Mahwah, NJ: Lawrence Earlebaum Assoc Inc.
- Curlee & Perkins (Ed) (1985). *Nature and treatment of stuttering*. London: Taylor & Francis.
- Guitar, B. (2014). *Stuttering-An integrated approach to its nature and treatment*. 4th Ed. Lippincott Williams and Wilkins, Baltimore.
- Hegde, M.N., & Freed D. (2011). *Assessment of communication disorders in adults*. Chapter VII., Plural publishing, Oxford, Brisbane.
- Manning, W. H. (2010). *Clinical decision making in Fluency disorders*. 3rd Ed. Delmer, Cengage learning.
- Riley (1981). *Stuttering prediction instrument for young children*. Austin: Pro. Ed
- Van Riper, C. (1982). *Nature of stuttering*. 2nd Ed. New Jersey: Prentice Hall NJ
- Yairi, E & Seery, C.H. (2015). *Stuttering-Foundations and clinical applications* 2nd Ed. Pearson Education, Inc, USA

B.ASLP ISS Scheme - 4 years programme

Unit 5

- Curlee (1993). Stuttering and related disorders of fluency. New York: Thieme Medical Publisher.
- Guitar, B. (2014). Stuttering-An integrated approach to its nature and treatment. 4th Ed. Lippincott Williams and Wilkins, Baltimore.
- Hegde, M.N., & Freed D. (2011). Assessment of communication disorders in adults. Chapter VII., Plural publishing, Oxford, Brisbane.
- Manning, W. H. (2010). Clinical decision making in Fluency disorders. 3rd Ed. Delmer, Cengage learning.
- Ward, D., & Scott, K.S. (2011) Cluttering:A handbook of research, intervention and education. Hove, UK,: Psychology Press.
- Yairi, E & Seery, C.H. (2015). Stuttering-Foundations and clinical applications 2ndEd. Pearson Education, Inc, USA.

Common to all units:

- Bloodstein, O. (1975). A handbook on stuttering. Chicago: National Easter Seal Society for Crippled Children and Adults.
- Bloodstein, O. (1993). Stuttering. Boston: Allyn and Bacon
- Conture (1990). Stuttering. New Jersey: Prentice Hall.
- Curlee (1993). Stuttering and related disorders of fluency. New York: Thieme Medical Publisher
- Curlee & Perkins (Ed) (1985). Nature and treatment of stuttering. London: Taylor & Francis.
- Eisenson, J. (1975). Stuttering: A symposium. New York: Harper & Row.
- Hahn, E.F & Hahn, E.S. (1973). Stuttering significant theories and therapies. 2ndEd. California: Stanford University Press.
- Myers, Louis, Ko (1992). Cluttering. Kobworth: Far Communication.
- Silverman, F.H (1992). Stuttering and other fluency disorders. Inglewood Cliffs: Prentice Hall.
- Starkweather, D. (1987). Fluency and stuttering. New Jersey: Prentice-Hall
- Van Riper, C. (1973). Treatment of stuttering. Jew Jersey: Prentice Hall.
- Van Riper, C. (1982). Nature of stuttering. 2nd Ed. New Jersey: Prentice HallInc.
- Wells (1987). Stuttering treatment-A.C. New Jersey: Prentice-Hall.
- Weiss (1964). Cluttering. New Jersey: Prentice Hall.
- Wingate, M.E. (1976). Stuttering theory and treatment. New York: Irvington.

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PAPER: VOICE AND ITS DISORDERS

Objectives

1. At the end of the semester, the student will be able to understand the following,
2. Voice, its characteristics
3. Differentiate normal from abnormal voice
4. Correlate the signs and symptoms to probable causes
5. Assessment and management of voice disorders

Unit 1: Voice Production and Correlates of Voice -10 Hrs

- 1.1 Review of anatomy of respiratory, laryngeal, resonatory systems and vocal folds
- 1.2 Physiology of voice – voice production, Theories of phonation, pitch and loudness change
- 1.3 Correlates of voice – acoustic: physical, psycho-physical, aerodynamic and physiological correlates
- 1.4 Development of voice and factors influencing voice development

Unit 2: Assessment of Voice -10 Hrs

- 2.1 Voice – definition, characteristics
- 2.2 Professional Voice Users
- 2.3 Assessment of voice
Qualitative – pitch, Loudness, quality (GRBAS, CAPE-V & others) Quantitative - F0 & its measures, Intensity and its measures, aerodynamic measures (Vital capacity, MPD, MAFR, Sub-glottal pressure), Laryngeal measure (Glottogram, Inverse filtering), Measures of Nasality (Nasalance)
- 2.4 Invasive methods – Endoscopy & Stroboscopy

Unit 3: Voice Disorders and its Classification -12 Hrs

- 3.1 Voice disorders – Organic, Neurological (vocal fold palsies, Spasmodic dysphonia, Essential voice tremor), Psychogenic, functional, mutational falsetto, puberphonia, Endocrinal- causes, signs, symptoms, vocal symptoms
- 3.2 Classification of voice disorders
- 3.3 Voice disorders – Organic, Neurological (vocal fold palsies, Spasmodic dysphonia, Essential voice tremor), Psychogenic, functional, mutational falsetto, puberphonia, Endocrinal- causes, signs, symptoms, vocal symptoms
- 3.4 Classification of voice disorders

Unit 4: Congenital Voice Disorders and Aging of Voice -10 Hrs

- 4.1 Congenital conditions of larynx, oral and nasal cavities causing voice disorders – stenosis, web, tracheo-/ laryngomalacia, *hypernasality and hyponasality* - characteristics, signs, symptoms, vocal symptoms and management
- 4.2 Aging voice – characteristics, signs, symptoms, vocal symptoms

Unit 5: Management of Voice Disorders -12 Hrs

- 5.1 Voice therapy techniques/ methods
 - Facilitating Approaches
 - Hyperfunctional Voice Disorders
 - Hypofunctional Voice Disorders
 - Establishing/Modifying the Pitch
 - Hyper Nasality & Hypo Nasality
- 5.2 Voice therapy for professional voice users (Teachers, Singers and Actors)
- 5.3 Medical and Surgical Management of voice disorders – Common classes of drugs used and surgical procedures used in treatment of some disorders of voice

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PRACTICUM

1. Recording of voice samples
2. Qualitative analyses of five normal, and abnormal voice samples
3. Quantitative analyses of five normal, and abnormal voice samples in to measure the following parameters:(a) Frequency and related parameters (b) Intensity and related parameters (c) Perturbation measures (d) Electroglottography (e) Quality
4. Quantitative analyses for singers – Base pitch, Frequency of notes, tremolos
Quantitative analyses of aging voice including tremors Submission of records

REFERENCES

Common to all units

- Aronson, A.E. (1990). *Clinical voice disorders*. New York: Thieme Inc.
- Aronson, A.E. (1980). *Clinical voice disorders: An interdisciplinary approach*. New York: Thieme Stratton
- Boone, D. (1977). *Voice and voice therapy*. 2nd Ed. New Jersey: Prentice Hall Inc.
- Boone, D.R. & McFarlane, S.C (1994). *The voice and voice therapy*. 5th Ed. Englewood Cliffs, New Jersey: Prentice-Hall.
- Case, J.L (1991). *Clinical management of voice disorders*. Austin: Pro.Ed.
- Fawcus, m. (Ed) (1991). *Voice disorders and their management*. San Diego: Singular Publishers Group
- Greene, M.C.L. & Mathieson, L. (1989). *The voice and its disorders*. London: Whurr Publishers
- Lushinger & Arnold (1967). *Voice and speech, language*. California: Woodsworth.
- Moore, G.P. (1971). *Organic voice disorders*. New Jersey: Prentice Hall.
- Prater, R.J. & Swift, R.W. (1984). *Manual of voice therapy*. Boston: Little Brown Co.
- Van Riper, C & Irwin, J.V. (1968). *Vocie and articulation*. New York: Prentice Hall Inc.

Unit 1

- Culbertson, W. R., Cotton, S. S., & Tanner, D. C. (2006). *Anatomy and Physiology Study Guide for Speech and Hearing*. Plural Publishing, San Diego.
- Fuller, D. R., Pimentel, J. T., & Peregoy, B. M. (2012). *Applied Anatomy and Physiology for Speech Language Pathology & Audiology*. Lippincott Williams & Wilkins, Baltimore, MD
- Seikel, J., King, D., & Drumright, D. (2015). *Anatomy & Physiology for Speech, Language, and Hearing*, V Edition. Cengage Learning
- Zemlin, W. R. (1998). *Speech and Hearing Science: Anatomy and Physiology*. Allyn & Bacon, Needham Heights, Massachusetts

Unit 2

- Ferrand, C. T. (2014). *Speech Science: An Integrated Approach to Theory and Clinical Practice*, III Edition. Pearson Education, Inc.
- Raphael, L. J., Borden, G. J., & Harris, K. S. (2011). *Speech Science Primer: Physiology, Acoustics and Perception of Speech*, VI Edition. Lippincott Williams & Wilkins, Baltimore, MD
- Hirano, M. (1981). *Clinical Examination of Voice*. New York: Springer-Verlag
- Judson, L. S. V. & Weaver, A. T. (1966). *Voice Science*. London: Vision Press Limited.

Unit 3

- Ferrand, C. T. (2014). *Speech Science: An Integrated Approach to Theory and Clinical Practice*, III Edition. Pearson Education, Inc.
- Baken, R. J., & Orlikoff, R. E. (2010). *Clinical Measurement of Speech and Voice*, II Edition. Delmar, Cengage Learning, New York
- Greene, M. C. L., & Mathieson, L. (1989). *The Voice and its Disorders*. London: Whurr Publishers
- Paul, R., & Cascella, P. W. (2007). *Introduction to Clinical Methods in Communication Disorders*, II Edition. Paul H. Brookes Publishing Co. Inc. Baltimore, Maryland
- Prater, R. J., & Swift, R.W. (1984). *Manual of Voice Therapy*. Boston: Little Brown Co.

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Unit 4

- Aronson, A. E., & Bless, D. M. (2010). *Clinical Voice Disorders*, IV Edition. Thieme, New York.
- Behrman, A., & Haskell, J. (2013). *Exercises for Voice Therapy*, II Edition. Plural Publishing, San Diego
- Boone, D. R., McFarlane, S. C., Von Berg, S. L. & Zraick, R. I. (2014). *The Voice and Voice Therapy*, XI Edition. Thieme, New York.
- Greene, M. C. L., & Mathieson, L. (1989). *The Voice and its Disorders*. London: Whurr Publishers
- Prater, R. J., & Swift, R. W. (1984). *Manual of Voice Therapy*. Boston: Little Brown Co.
- Sapienza, C., & Ruddy, B. H. (2013). *Voice Disorders Workbook*, II Edition. Plural Publishing, San Diego
- Stemple, J. C., Glaze, L., & Klaben, B. (2010). *Clinical Voice Pathology: Theory and Management*, IV Edition. Plural Publishing, San Diego
- Wilson, D. K. (1979). *Voice Problems of Children*, II Edition. Baltimore: Williams & Wilkins

Unit 5

- Benninger, M. S., & Murry, T. (2008). *The Singer's Voice*. Plural Publishing, San Diego
- Titze, I. R. (1994). *Principle of voice production*. New York: Prentice Hall
- Brown, O.L. (1996). *Discover your voice*. San Diego: Singular Publishing Group
- Davies, D. G., & Jahn, A. F. (1998). *Care of the Professional Voice: A Management Guide for Singers, Actors and Professional Voice Users*. Butterworth-Heinemann, Oxford.
- Sataloff, R. T. (1991). *Professional Voice*. New York: Raven Press.

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PAPER: DIAGNOSTIC AUDIOLOGY: PHYSIOLOGICAL TESTS

Objectives

After completing this course, candidate should be able to

1. Justify the need for using the different physiological tests in the audiological assessment
2. Independently run the tests and interpret the results to detect the middle ear, cochlear and retrocochlear pathologies and also differentially diagnose among the pathologies
3. Design tailor-made test protocols in immittance, AEPs and OAEs as per the clinical need
4. Make appropriate diagnosis based on the test results and suggest referrals.

Unit 1: Immittance evaluation - 12Hrs

1.1 Introduction

Definition of a physiological test, List of physiological tests in Audiology, overview of their clinical significance

1.2 Principle of immittance evaluation: Concept of impedance and admittance, their components, method to calculate the total impedance/admittance, resonant frequency, concept of acoustic impedance, justification for using admittance in clinical measurements, justification for using 226Hz probe tone

1.3 Instrumentation

1.4 Tympanometry: definition, measurement procedure, response parameters (tympanometric peak pressure, static admittance, gradient /tympanometric width), their measurement and normative, classification of tympanogram, clinical significance of tympanometry

1.5 Esustachian tube functioning tests of tympanometry: overview on pressure equalization function of ET, Valsalva, Toynbee, William's pressure swallow, Inflation-deflation test.

1.6 Overview on multicomponent and multi-frequency tympanometry

1.7 Reflexometry: Definition, acoustic reflex pathway, measurement procedure, concept of ipsilateral and contralateral acoustic reflexes, Jerger box pattern, clinical applications of acoustic reflexes, Reflex decay test

1.8 Overview on wide band reflectance and wide band tympanometry

Unit 2: Auditory brainstem response -12 Hrs

2.1 Introduction and classification of AEPs

2.2 Instrumentation

2.3 Principles of AEP recording techniques: Stimulus related, acquisition related: Near vs far field recording, Electrode Impedance, Electrode montage (Dipole orientation, Scalp distribution), Common mode rejection, Pre-amplification, Filtering, Time locked acquisition, Artifact rejection windowing, Averaging.

2.4 Introduction to Auditory brainstem responses (ABR), generators

- Protocol and procedure of recording Auditory brainstem response
- Factors affecting auditory brainstem responses
- Analysis of ABR and clinical inferences
- Clinical applications of ABR

Unit 3: Middle and long latency auditory evoked potentials: -10 Hrs

3.1 Introduction to middle and late latency auditory potentials

- Generators of MLR, ALLR and
- other late auditory potentials (P300 and MMN, P600, N400, T-complex, CNV)
- Protocol for recording MLR, ALLR, P300 and MMN
- Analysis of MLR, LLR, P300 and MMN
- Factors affecting MLR and ALLR
- Interpretation of results and their clinical applications of MLR and cortical auditory evoked potentials

Unit 4: Otoacoustic emissions - 10 Hrs

4.1 Introduction to Otoacoustic emissions with a brief note on history

- Origin and classification of OAEs

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4.2 Instrumentation

- Procedure of OAE measurement: SOAE, TEOAEs, and DPOAEs
- Interpretation of results: SOAE, TEOAEs, and DPOAEs
- Factors affecting OAEs: SOAE, TEOAEs, and DPOAEs
- Clinical applications of OAEs: SOAE, TEOAEs, and DPOAEs
- Contralateral suppression of OAEs and its clinical implications

Unit 5: Vestibular system and its assessment - 10 Hrs

- Overview on structure and function of vestibular system
- Overview on other systems involved in balance including VOR and VSR
- Signs and Symptoms of vestibular disorders
- Team in the assessment and management of vestibular disorders
- Tests for Assessment
- Electronystagmography and its clinical significance: Measurement procedure and interpretation: tests for peripheral and central vestibular function
- Overview on VNG
- VEMP: c-VEMP and o-VEMP, recording procedure, response interpretation and clinical inferences

PRACTICUM

Immittance Evaluation

- Draw Vector plots for
 - middle system at resonance,
 - mass dominated ME system
 - Stiffness dominated middle ear system
- Draw compensated and uncompensated tympanograms for different assumed values of static admittance and ear canal volume (10 examples)
- Measure admittance in the calibration cavities of various volumes and note down the observations
- Calculate Equivalent ear canal volume by measuring static admittance in an uncompensated tympanogram (10 ears)
- Do tympanogram in the manual mode and measure peak pressure, peak admittance and ear canal volume manually using cursor (10 ears).
- Measure gradient of the tympanogram (10 ears)
- Interpret hypothetical case results indicating the presence of various middle ear pathologies (20 cases)
- Vary different stimulus and procedure related parameters and measure tympanogram to witness their effects. Few of the mandatory parameters are, probetone frequency, rate of pressure change, direction of pressure change, number of trials, probe insertion depth, sneezing before measurement, speaking while measurement(10 ears)
- Administer Valsalva and Toynbee and William's pressure swallow (5 ears)
- Record acoustic reflex thresholds in the ipsi and contra modes, compare between the two modes. Analyze the group data to derive the mean, and range of acoustic reflex thresholds (15 individuals)
- Plot Jerger box pattern for various hypothetical conditions that affect acoustic reflexes and interpret the pattern and the corresponding condition.
- Carry out Acoustic reflex decay test and quantify the decay manually using cursor (5 individuals).
- Auditory Evoked Potentials
- Make protocol for recording ABR for threshold estimation and site of lesion testing
- Clean the electrode sites and place electrode in horizontal and vertical montage
- Locate M1, M2, Cz, Fz, Fpz, Nasion, inion, Pz electrode sites as per the 10-20 system.
- Record the ABRs in 10 dB nHL steps starting from 90 dB nHL. The threshold of ABR should be tracked using bracketing method (in 5 dB nHL steps near the threshold).

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- ABR threshold should be correlated with the PTA1 and PTA2. Draw the latency-intensity function
- Record ABR with contralateral masking. Compare masked and unmasked ARR waveforms in terms of amplitude, latency, & morphology.
- Record ABR using Single Vs Dual channels and, note down the differences
- Record ABR using different montages like the horizontal and vertical and effect of interchanging the Inverting with non-inverting.
- Induce various artifacts (bite, blink head movement. near to electrical gadget) and note down their effect on ABR recording.
- Students must record ABR for clicks, tone burst (500 — 4000 Hz at octave frequencies), tone pips (500 - 4000 Hz at octave frequencies).
- Record ASSR for stimuli of different frequencies and estimate the thresholds
- Record ALLR, and analyse the responses (2 individuals each).
- Otoacoustic emissions
- Noting down the differences in the probe used for TEOAEs and DPOAEs
- Setting protocol for recording TEOAEs and DPOAEs
- Record TEOAEs and note down the amplitude, SNR, noise floor and reproducibility at octave and mid-octave frequencies. Note down the stimulus stability and the overall SNR (10 ears).
- Record DPOAEs and note down the amplitude, SNR, noise floor and reproducibility at octave and mid-octave frequencies (10 ears)
- Record contralateral suppression of TE and DPOAEs and note down the suppression magnitudes
- Tests of vestibular functioning
- Observation of ENG/VNG and VEMP

REFERENCE

Unit 1

- Gelfand, S. A. (2009). *Essentials of Audiology*. Thieme
- Katz, J., Medwetsky, L., Burkard, R. F., & Hood, L. J. (Eds.). (2007). *Handbook of Clinical Audiology* (6th revised North American ed edition). Philadelphia: Lippincott Williams and Wilkins.
- Musiek, F. E., & Rintelmann, W. F. (1999). *Contemporary Perspectives in Hearing Assessment*. Boston: Pearson.
- Katz, J. (2014). *Handbook of Clinical Audiology* (Seventh, North American Edition edition). Philadelphia: LWW.
- Popelka, G. R. (1981). *Hearing Assessment with the Acoustic Reflex*. Grune & Stratton.
- Rintelmann, W. F. (Ed.). (1979). *Hearing Assessment*. Baltimore: Lippincott Williams and Wilkins.
- Roeser, R. J., Valente, M., & Hosford-Dunn, H. (2007). *Audiology: Diagnosis*. Thieme.
- Wiley, T. L., & Fowler, C. G. (1997). *Acoustic Immittance Measures in Clinical Audiology: A Primer* (1 edition). San Diego: Singular Publishing Group.

Unit 2

- Hall, J. W. (2006). *New Handbook for Auditory Evoked Responses* (1 edition). Boston, Mass: Pearson.
- Hood, L. J. (1998). *Clinical Applications of the Auditory Brainstem Response*. Singular Publishing Group.
- Hunter, L., & Shahnaz, N. (2013). *Acoustic Immittance Measures: Basic and Advanced Practice* (1 edition). San Diego, CA: Plural Publishing.
- Jacobson, J. T. (1985). *The Auditory brainstem response*. College-Hill Press.
- Katz, J., Medwetsky, L., Burkard, R. F., & Hood, L. J. (Eds.). (2007). *Handbook of Clinical Audiology* (6th revised North American ed edition). Philadelphia: Lippincott Williams and Wilkins.

B.ASLP ISS Scheme - 4 years programme

Musiek, F. E., Baran, J. A., & Pinheiro, M. L. (1993). *Neuroaudiology: Case Studies* (1 edition). San Diego, Calif: Singular.

Katz, J. (2014). *Handbook of Clinical Audiology* (Seventh, North American Edition edition). Philadelphia: LWW.

Unit 3

Hall, J. W. (2006). *New Handbook for Auditory Evoked Responses* (1 edition). Boston, Mass: Pearson.

Unit 4

Hall, J. W. (2000). *Handbook of Otoacoustic Emissions*. Cengage Learning.

Hall, J. W., & Dhar, S. (2010). *Otoacoustic Emissions: Principles, Procedures, and Protocols* (1 edition). Plural Publishing Inc.

Robinette, M. S., & Gattke, T. J. (Eds.). (2007). *Otoacoustic Emissions: Clinical Applications* (3rd edition). New York: Thieme.

Unit 5

Biswas, A. (1995). *Clinical Audio-vestibulometry for Otolologists and Neurologists*. Bhalani Publishing House.

Jacobson, G. P., Newman, C. W., & Kartush, J. M. (1997). *Handbook of Balance Function Testing* (1 edition). San Diego, Calif: Singular.

Jacobson, G. P., & Shepard, N. T. (2007). *Balance Function Assessment and Management* (1 edition). San Diego, CA: Plural Publishing Inc.

McCaslin, D.L. (2012) *Electronystamography/ Videonystamography* (1 ed.). San Diego: Plural Publishing.

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PAPER: REHABILITATIVE AUDIOLOGY

Objectives

After completion of this course, candidate should be able to:

- List various types of auditory training approaches available for individuals with hearing impairment.
- Explain various types of speech reading tests and speech reading training procedures available.
- Select appropriate management strategies for older adults with hearing impairment.
- Select appropriate management option/s for Tinnitus and Hyperacusis.
- Select appropriate management technique/s for children with special needs.

Unit 1: Auditory Learning - 12 Hrs

- 1.1 Definitions and historical background, Auditory training Vs Auditory learning
- 1.2 Role of audition in speech and language development in normal children and its application in education of individuals with hearing impairment
- 1.3 Factors affecting outcome of auditory learning
- 1.4 Methods of auditory training
- 1.5 Individual Vs Group auditory training
- 1.6 Auditory training activities
 - For individuals of different listening abilities / levels
 - Verbal vs. nonverbal material
 - For individuals Vs group activities
- 1.7 Computer based modules for auditory training

Unit 2: Speech reading - 10 Hrs

- 2.1 Definitions and Need of speech reading
- 2.2 Visibility of speech sounds – audiovisual perception vs. visual perception
- 2.3 Visual perception of speech by individuals with hearing impairment
- 2.4 Overview of speech reading tests, including Indian tests
 - Analytic Vs Synthetic tests
 - Adults Vs Children
- 2.5. Factors influencing speech reading
- 2.6 Methods of speech reading training: analytical vs synthetic (including speech tracking)
- 2.7 Individual and group speech reading training
- 2.8 Speech reading activities
 - For adults and children
 - For individual vs. group activities

Unit 3: Rehabilitation of older adults with hearing impairment -10 Hrs

- 3.1 Special strategies used for rehabilitation of older adults with hearing impairment
- 3.2 Communication strategies
 - Anticipatory strategies
 - Repair strategies
- 3.3 Computer based modules for auditory training
- 3.4 Overview on outcome measures of auditory training

Unit 4: Management of Tinnitus and Hyperacusis - 10 Hrs

- 4.1 Audiological management of tinnitus
 - Overview on Models related to tinnitus management
 - TRT, Masking, others
 - Devices used for management
- 4.2 Audiological management of hyperacusis

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Unit 5: Management of children with special needs -12 Hrs

- 5.1 Management of the deaf-blind child
- 5.2 Management of other multiple disabilities like hearing loss associated with cognitive problems
- 5.3 Overview on management of children with central auditory processing problems

PRACTICUM

1. Evaluation of baseline auditory skills
2. Preparation of lesson plans for home training.
3. Carrying out auditory learning activities on clients with various degrees of hearing impairment
4. Use of communication strategies on clients
5. Observe the speech and language characteristics of individuals with hearing impairment
6. Knowledge on evaluating baseline auditory skills, lesson plan, concise report
7. Role play of auditory learning, speech reading, communication strategies
8. Observation of management of APD and Multiple disability
9. Observation of management of Tinnitus and Hyperacusis

REFERENCES

Unit 1 & 3

- Alpiner, J.G & McCarthy. P.A (2000). Rehabilitative Audiology- Children & Adults. United States of America; Lippincott Williams & Wilkins.
- Erber, N.P. (1982). Auditory training. Washington: A.G. Bell Association for the Deaf.
- Flexer, C. (1994). Facilitating hearing and listening in young children. California: Singular Publishing Inc.
- Griffiths, C. (1974). Proceedings of the international conference on auditory technique. Illinois: Charles C Thomas.
- Montano, J.J. & Spitzer, J.B. (2014). Adult Audiologic Rehabilitation. 2nd Ed. Plural Publishing Inc.
- Oyer, H.J. (1966). Auditory communication for the hard of hearing. New Jersey: Prentice Hall.
- Schow, R.L. & Nerbonne, M.A. (1989). Introduction to Aural Rehabilitation. 2nd Ed. Allyn and Bacon
- Tye-Murray, N. (2015). Foundations of Aural Rehabilitation. 4th ed. Cengage Learning
- Valente. M & Hosford- Dunn. H (2008). Audiology treatment. 2nd Ed. Newyork: Thieme Medical Publishers, Inc.
- Vernon.J.A (1998). Tinnitus- Treatment and Relief. United States of America; Allyn and Bacon

Unit 2:

- Berger, K.W. (1972). Speech reading: Principles and Methods. National Educational Press.
- Montano, J.J. & Spitzer, J.B. (2014). Adult Audiologic Rehabilitation. 2nd Ed. Plural Publishing Inc.
- Nielsen, H.B. & Kampp. E. (1974). Visual and audio-visual perception of speech. Denmark: Sixth Danavox Symposium.
- O'Neill, J.J. & Oyer, H.J. (1961). Visual communication for the hard of hearing. New Jersey: Prentice Hall.
- Plant, G. & Spens, K.E. (1995). Profound deafness & speech communication. London: Whurr Publishers Ltd.
- Sanders, D.A. (1993). Management of hearing handicap infants to elderly. 3rd Ed. New Jersey: Prentice Hall.
- Tye-Murray, N. (2015). Foundations of Aural Rehabilitation. 4th ed. Cengage Learning.

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Unit 4:

- Jastreboff, P.J & Hazell, J.W.P (2004). Tinnitus retraining therapy - implement-ing the Neurophysiological model. United Kingdom; Cambridge University Press
- Montano, J.J. & Spitzer, J.B. (2014). Adult Audiologic Rehabilitaion. 2nd Ed. Plural Publishing Inc.
- Snow, J.B. (2004). Tinnitus: Theory and Management. BC Decker Inc.
- Tyler.R (2000). Tinnitus handbook. Unites states of America; Singular Thomson Learning.

Unit 5:

- Bellis, T.J. (1996). Assessment and management of central auditory processing disorders in educational setting: From Science to practice. San Diego: Singular Publishing Co.
- Johnson, C.E. (2012). Introduction to Auditory Rehabilitaion. Pearson Education Inc.
- Plant, G. & Spens, K.E. (1995). Profound deafness & speech communication. London: Whurr Publishers Ltd.
- Trehur, S.E. & Shneider, B. (Ed) (1985). Auditory development in infancy. New York: Plenum Press.
- Walsh, S.R. & Holzberg, R. (1981). Understanding and educating the deaf-blind severely and profoundly handicapped – An international perspective. Springfield: Charles C Thomas Publishers.

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PAPER: RESEARCH METHODS IN COMMUNICATION SCIENCES AND DISORDERS

Objectives:-

After studying this course the students will be able to

- Develop inquisitiveness to carry out research in the field of communication sciences and disorders
- Design and execute research under guidance
- Understand and follow the ethical guidelines for conducting research

Unit 1: Scientific status of research in communication sciences and disorders - 10 Hrs

- 1.1 Historical aspects of research in communication sciences and disorders
- 1.2 Basic concepts in Research: Definitions, principle, assumptions, characteristics, functions and overview of research
- 1.3 Speech-Language Pathology and Audiology as behavioral sciences
- 1.4 Qualities of a researcher/scientific clinician
- 1.5 Need for scientific enquiry in Speech-Language Pathology and Audiology
- 1.6 Choosing a research problem, formulation of research question, statement of research question.

Unit 2: Basic Concepts of scientific research in communication sciences and disorders - 12 Hrs

- 2.1 Hypotheses – Need, formulation of hypotheses, types of hypotheses
- 2.2 Types of variables
- 2.3 Types of Sampling procedures (Random and Non-random)
- 2.4 Types/ Methods of data collection and their advantages and disadvantages
- 2.5 Reliability and Validity (Internal and External Validity)
- 2.6 Measurement procedures used in communication sciences

Unit 3: Basic research methods and designs for communication sciences and disorders - 12 Hrs

- 3.1 Types of research methods and their application
- 3.2 Application of different types of research
- 3.3 Research design – Various group designs, feasibility of their application.
- 3.4 Research design – Various single subject designs, feasibility of their application.

Unit 4: Reporting research in communication sciences and disorders -10 Hrs

Evidence based research and Meta-analysis

- 4.1 Effects on research designs (Order effect)
- 4.2 Components of research article
- 4.3 Reporting research – organization, processing, analyses and presentation of data

Unit 5: Documentation of research for communication sciences and disorders - 10 Hrs

- 5.1 Scientific report writing
- 5.2 Different types of formats or styles (APA, AMA and MLA)
- 5.3 Evaluation of research report
- 5.4 Ethics of research

PRACTICUM

Research Methods in Communication Sciences and Disorders

1. Propose at least two research questions based on their clinical experience.
2. Identify variables in the five research questions.
3. Propose suitable research designs for the three research questions.
4. Organize and report hypothetical study of any one of the above.

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5. Critically evaluate one of the research articles from journal
6. Assignment on ethical guidelines for research
7. Submission of records

REFERENCE

Common reference to all units:

- Best J. W. & Kahn J. V. (2006). *Research in Education*. (10th Edition), Singapore: Pearson publication.
- Burns, R. B. (2000). *Quantitative Methods*. In *Introduction to Research methods*. New Delhi: SAGE publication.
- Hegde, M. N. (2003). *Clinical research in communicative disorders: Principles and strategies*. (3rd Edition), Austin: Pro-ed.
- Hesse-Biber, S. N. & Leavy, P. (2011). *The Ethics of social research*. In *The Practice of qualitative research*. (2nd Edition), New Delhi: SAGE publication.
- Krishnaswamy, O. R. (1993). *Methodology of research in social science*. Bombay: Himalaya Publishing house.
- Meline, T. (2010). *A research primer for communication sciences and disorders*. Singapore: Pearson publication.
- Pannbaker, M. H. & Middleton, G. F. (1994). *Introduction to clinical research in communication disorders*. San Diego: Singular Publication.
- Ranjitkumar, (2014). *Research Methodology. A step by step guide for beginners* (4th Edition) New Delhi: SAGE Publication.

Unit 1:

- Broota, K. D. (1989). *Experimental design in behavioural research*. New Delhi: Wiley Eastern.
- Dominowski, R. L. (1980). *Research Methods*. New Jersey: Prentice-Hall Inc.
- Kerlinger, F. N. (1964). *Problems and Hypotheses*. In *Foundations of behavioral research*. New York: Rinehart and Winston.
- Pannbaker, M.H (1994). *Introduction to clinical research in communication disorders*. San Diego: Singular Pub Group.
- Plutchik, R. (1968). *Foundations of behavioural research*. New York: Harper & Row.

Unit 2:

- Dane F. C. (2011). *Sampling and Measurement*. In *Evaluating research: Methodology for people who need to read research*. New Delhi: SAGE publication.
- Grosov, M. S & Sardy, H. (1985). *A research primer for the social and behavioral sciences*. New York: Academic Press.
- Hesse-Biber, S. N. & Leavy, P. (2011). *Methods of data collection*. In *The Practice of qualitative research* (2nd Edition), New Delhi: SAGE publication.
- Huck, S. W. (2012). *Reliability and Validity*. In *Reading statistics and research* (6th Edition). Singapore: Pearson publication.
- Mitchell, M. L. & Jolley, J. M. (2010). *Internal validity*. In *Research design Explained*. Singapore: Wadsworth publication.

Unit 3:

- Doehring, D. G. (1988). *Research strategies in human communication disorder*. Austin: Pro-ed.
- Frey, L. R. Botan, C. H. Friedman, P. G. & Krep, G. L. (1991). *Investigating communication: An introduction to research methods*. Inglewood Cliffs: Prentice Hall.
- Haynes, W. O. & Johnson, C. E. (2009). *Understanding research and evidence based practice in communication disorders*. Singapore: Pearson publication.
- Hedrick, T. E. Bickman, L. & Rog, D. J. (1993). *Applied research design: A practical guide*. London: Sage Publications.

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- Miller, D. C. (1997). Handbook of research design and social measurement. London: Sage Publications.
- Pande, G. C. (1989). Research methodology in social science. New Delhi: Anmol Publishers.
- Silverman, F. H. (1998). Asking questions and answering & Types of data. In Research design and evaluation in speech language pathology and audiology (4th Edition). Boston: Allyn & Bacon.
- Tucker, R. K., Weaver R. L. & Berryman – Fink, C. (1981). The need of research in speech communication. In Research in speech communication. New Jersey: Prentice- Hall.
- Whaley, B. B. (2014). Experimental & Surveys. In Research methods in health communication: Principle and application. New York: Taylor & Francis.

Unit 4:

- Haynes, W. O., & Johnson, C. E., (2009). Evidence –based practice and applied clinical research, In Understanding research and Evidence –based practice in communication disorders, Boston: Pearson publication.
- Hegde, M. N. (2003). Clinical research in communicative disorders: Principles and strategies. (3rd Edition), Austin: Pro-ed.
- Ventry, M. I. & Schiavetti, N. (1980). Organization and analysis of data. In evaluating research in speech pathology and audiology. London: Addison-Wesley.
- Hesse-Biber, S. N. & Leavy, P. (2011). Analysis and Interpretation. In The Practice of qualitative research (2nd Edition), New Delhi: SAGE

Unit 5:

- Schiavetti, L. & Metz, R. (1997). Evaluating research in communication disorders. Boston: Allyn & Bacon.
- Hegde, M. N. (2005). The conduct of the student clinician. In Clinical Methods and practicum in Speech Language pathology, (4th Edition), Singapore: Thomson publication
- Hesse-Biber, S. N. & Leavy, P. (2011). The Ethics of social research. In The Practice of qualitative research (2nd Edition), New Delhi: SAGE publication.
- Hegde M. N. (2010). A course book on Scientific and professional writing for speech language pathology (4th Edition), Singapore: Delmar publication.
- Dane F. C. (2011). Evaluating research: Methodology for people who need to read research. New Delhi: SAGE publication.

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Semester V

PAPER: MOTOR SPEECH DISORDERS IN CHILDREN

Objectives

After studying this paper at the end of the semester, the student should be able to

- Demonstrate a working knowledge of the neurological substrates of motor speech disorders.
- Understand the nature of motor speech disorders in children including classification, characteristics and etiologies.
- Evaluate and diagnose motor speech disorders in children.
- Apply principles of motor learning to the treatment of motor speech disorders in children.
- Understand the different intervention approaches in the comprehensive management of children with motor speech disorders.

Unit 1: Introduction to Neuromotor Organization and Sensorimotor Control of Speech and Motor Speech Disorders -12 Hrs

- 1.1 Central and peripheral nervous system in speech motor control (motor control by cortical, subcortical structures, centrifugal pathways, brainstem, cerebellum and spinal cord)
- 1.2 Neuromuscular organization and control and sensorimotor integration
- 1.3 Introduction to motor speech disorders in children
 - Motor speech disorders leading to developmental dysarthria
 - Cerebral palsy - definition, causes, associated problems, and classification
 - Syndromes leading to dysarthria (Juvenile progressive bulbar palsy, Congenital supranuclear palsy, Guillain-Barre syndrome, Worster-drought syndrome, Duchenne Muscular dystrophy)
 - Motor speech disorders leading to developmental apraxia of speech- definition, causes, associated problems, and classification

Unit 2: Nature of Motor speech Disorders in Children -12 Hrs

- 2.1 Neuromuscular development in normals and cerebral palsy
- 2.2 Reflex profile
- 2.3 Different types of cerebral palsy
 - Disorders of muscle tone – spasticity, rigidity, flaccidity, atonia
 - Disorders of movement – Hyperkinesias and dyskinesias – Ballismus, tremor, tic disorder, myoclonus, athetosis, chorea, dystonia, hypokinesias
 - Disorders of coordination - Ataxia
- 2.4 Speech and language problems in cerebral palsy
- 2.5 Different types of apraxia- verbal and nonverbal apraxia
- 2.6 Speech and language characteristics in developmental apraxia

Unit 3: Assessment of Motor Speech Disorders in Children -10 Hrs

- 3.1 Assessment of speech (acoustic, respiratory, resonatory, prosodic aspects) in cerebral palsy – objective and subjective methods
- 3.2 Assessment of oromotor aspects and feeding
- 3.3 Assessment of speech in developmental apraxia
- 3.4 Differential diagnosis of motor speech disorders with other developmental speech disorder

Unit 4: Management of Motor Speech Disorders in Children - 10 Hrs

- 4.1 Team approach to rehabilitation
- 4.2 General principles of motor learning
- 4.3 Speech and oromotor rehabilitation in cerebral palsy

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- Approaches to intervention-Behavioural (vegetative exercises, oral sensorimotor facilitation techniques, compensatory and facilitatory techniques for the correction of respiratory, phonatory, resonatory & articulatory errors) and prosthetic
- 4.4 Feeding intervention in cerebral Palsy
 - 4.5 Management of developmental apraxia of speech - specific speech therapy techniques, other approaches
 - 4.6 Rehabilitation of dual/multiple disability (cerebral palsy associated with mental retardation - speech disorders and techniques for speech correction; cerebral palsy associated with visual impairment- functional visual rehabilitation)

Unit 5: Other intervention approaches -10 Hrs

- 5.1 Augmentative and alternative communication (AAC)- Application of AAC methods in children with motor speech disorders in the Indian context, available AAC options (systems and devices), symbol selection (access methods), assessment for AAC candidacy, AAC intervention (team approach in the advocacy of AAC, instructional strategies)
- 5.2 Motor approaches: Different approaches in neuromuscular education (Bobath, Temple Fay, Phelps, etc.)
- 5.3 Assistive technology and adaptive devices for children with cerebral palsy (adapted positioning, specialized seats, mobility devices, orthotic devices)
- 5.4 Medical management of cerebral palsy (pharmacological and neurosurgical)
- 5.5 Supportive therapies in the rehabilitation of cerebral palsy- Hyperbaric oxygen therapy, aquatic therapy, hippotherapy, AYUSH
- 5.6 Welfare measures in children with motor speech disorders

PRACTICUM

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. Transcription & analysis of phonological processes in motor speech disorders in children using IPA
4. Preparation of public education pamphlet on motor speech disorders in children
5. Counseling a client/parent with motor speech disorder
6. Submission of a complete diagnostic and therapeutic profile (capstone) of a child with motor speech disorder
7. Submission of record

REFERENCE

Unit 1

- Bhatnagar, S.C. (2008). *Neuroscience for the study of Communication disorders*. Williams and Wilkins, Baltimore.
- Blencowe, S.M., & Sheldon, S.W. (1969). *Cerebral Palsy and the young child*. Livingstone Ltd., London.
- Brookshire, R.H. (1992). *An introduction to neurogenic speech disorders*. St. Louis: Mosby Year Book.
- Crary M.A (1993). *Developmental motor speech disorders*. San Diego. Whurr Publishers
- Espir, M. & Rose, F.C. (1983). *The basic neurology of speech and language*. Oxford: Blackwell Scientific.
- Ghai, C.L. (1996). *Textbook of human neurophysiology*. Delhi: AITBS.
- Hall, P.K., Jordon & Robin (1993). *Developmental apraxia of speech: Theory and clinical practice*. Austin: Pro.Ed.
- Love, R.J. (2000). *Childhood motor speech disability*. Allyn & Bacon, MA.

B.ASLP ISS Scheme - 4 years programme

- Love, R.J. & Webb, W.G. (1992). *Neurology for the speech, language pathologist*. Boston: Butterworth- Heinemann.
- Murdoch, B. E. (2011). *Handbook of acquired communication disorders in childhood*. Plural publishing Inc. , San Diego.
- Patton, K.T., & Thibodeau, G. A. (2014). *Nervous system*, chapter 8 (pp. 238-292). In *Mosby's Handbook of Anatomy and Physiology*. 2nd edn., Elsevier Inc.
- Singh, I. (1997). *Textbook of human neuroanatomy*. Jaypee Brothers Medical publishers, New Delhi
- Webb, W.G., & Adler, R.K. (2008). *Neurology for the speech-language pathologist*. Mosby Inc. St. Louis.
- Warner, J. J. (2001). *Atlas of Neuroanatomy*. Butterworth-Heinemann, USA.
- Patton, K.T., & Thibodeau, G. A. (2014). *Nervous system*, chapter 8 (pp. 238-292). In *Mosby's Handbook of Anatomy and Physiology*. 2nd edn., Elsevier Inc.
- Singh, I. (1997). *Textbook of human neuroanatomy*. Jaypee Brothers Medical publishers, New Delhi
- Webb, W.G., & Adler, R.K. (2008). *Neurology for the speech-language pathologist*. Mosby Inc. St. Louis.
- Warner, J. J. (2001). *Atlas of Neuroanatomy*. Butterworth-Heinemann, USA.

Unit 2

- Crary, M.A. (1993). *Developmental motor speech disorders*. San Diego, California: Singular Publishing Group Inc, Whurr Publishers.
- Denhoff, E., & Robinault, I. (1960). *Cerebral palsy and related disorders: A developmental approach to dysfunction*. New York: McGraw-Hill.
- Dodd, B. (Ed) (1995). *Differential diagnosis and treatment of children with speech disorders*. England: Whurr Publishers Ltd.
- Edward, M. (1984). *Disorders of articulation: Aspects of dysarthria and verbal dyspraxia*. New York: Singer Verlag.
- Hardy, J.C (1983). *Cerebral palsy*. New Jersey: Prentice Hall Inc.
- Johnston, R.B. (1976). *Motor function: Normal development and cerebral palsy*, chapter 2. In R.B., Johnston, & P.R. Magrab (Eds.), *Developmental disorders: Assessment, Treatment, Education*. University park press, Baltimore.
- Murdoch, B.E (1990). *Acquired speech and language disorders: A neuroanatomical and functional neurological approach*. London: Chapman & Hall.
- Sugden, D., & Wade, M. (2013). *Typical and atypical motor development*. Mackeith Press, London.
- Shyamala, K.C. (1991). *Speech and language behaviour of the cerebral palsied*. Govt. of India press, Coimbatore.
- Webb, W.G., & Adler, R.K. (2008). *Neurology for the speech-language pathologist*. Mosby Inc. St. Louis.

Unit 3

- Bahr, D.C. (2001). *Oromotor assessment and treatment: Ages and stages*. Allyn & Bacon, MA.
- Caruso, A. J., & Strand, E.A. (1999). *Clinical management of motor speech disorders in children*. Thieme Medical Publishers, Inc. New York.
- Darby, J.K (Ed) (1985). *Speech and language evaluation in neurology: Childhood disorders*. Orlando: Grune & Stratton.
- Thompson, G.H. et al. (1983). *Comprehensive management of cerebral palsy*. New York: Grune & Stratton.
- Scherzer, A.L., & Tscharnuter, I. (1982). *Early diagnosis and therapy in cerebral palsy: Primer on infant developmental problems*. New York: Marcel Dekker Inc.
- Yorkston, K.M., Beukelman, D.R., Strand, E.A., & Bell, K.R.(1999). *Management of motor speech disorders in children and adults*. Pro-Ed Inc., Austin.

B.ASLP ISS Scheme - 4 years programme

Unit 4

- Bahr, D.C. (2001). Oromotor assessment and treatment: Ages and stages. Allyn & Bacon, MA.
- Caruso, A. J., & Strand, E.A. (1999). Clinical management of motor speech disorders in children. Thieme Medical Publishers, Inc. New York.
- Langley, B & Lombardino, L.J. (Ed) (1991). Neurodevelopmental strategies for managing communication disorders in children with severe motor dysfunction.
- Mecham, M.J. (1996). Cerebral palsy. Pro-Ed Inc., Austin.
- Velleman, S. L. (2003). *Childhood apraxia of speech resource guide*. Clifton Park, NY: Delmar/Thomson/Singular.
- Yorkston, K.M., Beukelman, D.R., Strand, E.A., & Bell, K.R.(1999). Management of motor speech disorders in children and adults. Pro-Ed Inc., Austin.

Unit 5

- Beukelman, Yorkston, & Dowden (1994). Communication augmentation: A case book of clinical management. San Diego: College Hill Press.
- Blackstone & Bruskin (1986). Augmentative communication: An introduction. ASHA Publication.
- Crickmay, M.C. (1966). Speech therapy and the Bobath approach to cerebral palsy. Charles C Thomas publishers, USA.
- Enderby, P. (Ed) (1987). Assistive communication aids for the speech impaired. New York: Churchill Livingstone Inc.
- Glennen, S.L., & Decoste, D.C (1997). Handbook of augmentative and alternative communication. San Diego, London: Singular Publishing Group Inc.
- Hinchcliffe, A. (2007). Children with cerebral palsy: A manual for therapists, parents and community workers, 2nd edn. Sage publications, New Delhi.
- Hinchcliffe, A. (2003). Children with cerebral palsy: A manual for therapists, parents and community workers. Vistaar publications, New Delhi.
- Mussel white & Louis (1988). Communicative programming for persons with severe handicaps – Vocal and augmentative strategies. Texas: Pro. Ed.
- Silverman, F.H (1980). Communication for the speechless. London: Prentice Hall Inc.
- Tetzchner, S.V., & Martinsen, H. (2001). Introduction to Augmentative and Alternative Communication, 2nd edn. Whurr publishers.
- Thompson, G. H., Rubin I. L., & Bilenker, R.M. (1983). Comprehensive management of cerebral palsy. Grune & Stratton Inc., London.
- VanerHeiden, G., & Grilley, K. (Eds.) (1978). Non-vocal communication techniques and aids for the severely physically handicapped. New York: University Park Press.
- Loncke, F. (2014). Augmentative and Alternative Communication. Plural publishing, Inc., San Diego.

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PAPER: CHILD LANGUAGE DISORDERS

Objectives:

At the end of the semester the students should be able to

- Understand the traditional and recent theories w. r. t child language acquisition and disorders and issues related to bi/multilingualism.
- Understand the neuroscience of child language acquisition and disorders.
- Recognize and identify the different characteristics of each of the child language disorders.
- Assess child language disorders leading to appropriate diagnosis.
- Provide appropriate management for child language disorders.

Unit 1: Overview of theories of language acquisition in children - 12 Hrs

- 1.1 Overview of theories of language acquisition in children-Traditional and modern approaches in each
 - Biological maturation approaches
 - Cognitive approaches
 - Linguistic approaches
 - Information processing theories
 - Behavior theory
 - Pragmatic approaches
- 1.2 Language acquisition in bilinguals/ multilinguals- types (based on age, manner of acquisition)

Unit 2: Neurosciences of Language development and disorders - 10 Hrs

- 2.1 Neurobiological correlates – neuroanatomical, neurophysiological and neurochemical aspects of language development
- 2.2 Neurobiological underpinnings in child language disorders

Unit 3: Language characteristics (oral and written) of developmental and acquired language disorders in children -12 Hrs

- 3.1 Hearing impairment
- 3.2 Intellectual disability
- 3.3 Syndromes associated with child language disorders-Down Syndrome, Fragile X Syndrome, William's Syndrome, Klinefelter's Syndrome
- 3.4 Autism Spectrum Disorders.
- 3.5 Developmental dysphasia/specific language impairment
- 3.6 Acquired dysphasia/ Acquired Childhood Aphasia
- 3.7 ADD and ADHD
- 3.8 Language Learning disability/ Dyslexia

Unit 4: Multidimensional assessment in child language disorders- tests and protocols - 10 Hrs

- 4.1 Overview of behavioral and linguistic tests available for child language disorders
- 4.2 Assessment procedures for normal and children with language disorders – medical, neurobehavioral, neurolinguistic measures.
- 4.3 Differential diagnosis of children with language disorders
- 4.4 Co-morbidity in children

Unit 5: Management of child language disorders – 10 Hrs

- 1.1 Approaches and techniques for management of language disorders in children – cognitive linguistic, behavioral, Augmentative & alternative communication approaches.
- 1.2 Importance of team approach-Other approaches such as medical/surgical/Physiotherapy/ Occupational therapy

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1.3 Benefits, concessions and rights for children with language disorders

PRACTICUM

1. Record language samples of 2 children with language disorders and transcribe them as per IPA transcription.
2. Evaluate 2 typical children using REELS, KLT/ MLT, LPT.
3. Evaluate at least four children with language disorders at least one child each with the following:
 - Autism: using appropriate tests/ protocols (ABCCP, DDC-ASD, Indian Scale for Assessment of Autism (ISAA) etc.
 - Learning disability (ERS, RAP-K)
 - ADHD (ADHD checklist)
 - SLI (REELS, LPT, KLT)
 - MR (REELS, LPT, KLT)
4. Submission of the profile of children with language disorders (one for each disorder).
5. Submission of report of counseling carried out for parents of children with language disorders (one for each disorder).

REFERENCE

Unit 1

- Bhatia, T. K. & Ritchie, W. C. (2014). Handbook of Bilingualism and multilingualism. 2nd Ed. East Sussex, Wiley Blackwell.
- Bialystok, E. (2001). Bilingualism in Development: Language, Literacy and Cognition. New Delhi, Cambridge University Press.
- DeHouwer, A. (2000). An Introduction to Bilingual Development. Bristol, Multilingual Matters.
- Gleason, J. B. (2005). The Development of Language, 6th Ed, Pearson Education, Inc
- Grosjean, F. (1982). Life with two languages: An introduction to Bilingualism. Cambridge: M A., Harvard University Press.
- Hulit, L. M. & Howard, M. R. (2006). Born To Talk: A Introduction to Speech and Language Development, 4th Ed, Boston: Pearson Education, Inc.
- Levey, S. (2014). Introduction to Language development. San Diego: Plural Publishing Inc.
- Nelson, N. W. (1998). Childhood language disorders in context: Infancy through adolescence. 2nd Ed. USA: Allyn & Bacon Inc.
- Owens, R. E. (2008). Language Development: An Introduction. 5th Ed, Boston: Pearson Education, Inc.
- Thirumalai, M. S. & Shyamala, K. C. (1988). Simultaneous Acquisition of Two Languages: An overview. Mysore, India, Central Institute of Indian Languages.

Unit 2

- Baumgartner, J. M. Kuehn, D. P., & Lemme, M. L. (1989). Neural bases of speech, hearing and language. San Diego: College Hill Park.
- Espir, M. L. E. & Rose, F. C. (Ed) (1983). The basic neurology of speech and language. Oxford: Blackwell Scientific Pub.
- Ingram, J. C. L. (2007). Neurolinguistics- An Introduction to Spoken Language Processing and its Disorders, Melbourne: Cambridge University Press.
- Lenneberg, E. H. & Lenneberg, E. (1975). Foundations of Language Development: A multidisciplinary Approach. New York: Academic Press Inc.
- Levey, S. (2014). Introduction to Language development. San Diego: Plural Publishing Inc.
- Miller, J. L. & Eimas, P. D. (1995). Speech, language and communication. New York: Academic Press.
- Nelson, N. W. (1998). Childhood language disorders in context: Infancy through adolescence. 2nd Ed. USA: Allyn & Bacon Inc.

B.ASLP ISS Scheme - 4 years programme

- Owens, R. E. (2008). *Language Development: An Introduction*. 5th Ed, Boston: Pearson Education, Inc.
- Rouse, M. H. (2016). *Neuroanatomy for Speech Language Pathology & Audiology*. Burlington: Jones & Bartlett Learning.

Unit 3

- Angell, C. A. (2010). *Language Development and Disorders- A Case Study Approach*, LLC: Jones & Bartlett Publishers.
- Burack, J. A., Hodapp, R. M., & Zigler, E. (1998). *Handbook of mental retardation and development*. London: Cambridge University Press.
- Byers, B. & Edwards, A. (1989). *Developmental disorders of language*. California: Singular Pub. Co.
- George J. D. & Lee, K. (2011). *Young Children with ADHD: Early Identification and Intervention*. Washington DC: American Psychological Association.
- Gilliam, J. E. (Ed) (1981). *Autism: Diagnosis, instruction, management and research*. Springfield, IL: Charles Thomas.
- Gregg, N. (2009). *Adolescence & Adults with Learning Disabilities and ADHD- Assessment and Accommodation*. New York: Guilford Publications, Inc.
- Hegde, M. N. (1996). *A Course Book on Language Disorders in Children*. San Diego: Singular Publishing Group.
- Hulme, L & Snowling, M (1994). *Reading development and dyslexia*. London: Whurr Pub.
- Janet, D. (1996). *Dyslexia*. London: Whurr Publishers Ltd.
- Jeanette, R. (2007). *Learning Disability*. 2nd Ed. New York: John Wiley and Sons.
- Jena, S. P. K. (2013). *Learning disability: Theory to practice*. New York: Sage Publications.
- Kaderavek, J. N. (2015). *Language disorders in children: Fundamental concepts of assessment and intervention*. 2nd Ed. USA: Pearson Education Inc.
- Karant, P. & Joe, R. (2003). *Learning disabilities in India*. New Delhi: Sage Publications.
- Lees, J. & Urwin, S. (1995). *Children with Language Disorders*. Delhi: A.I.T.B.S. Publishers and Distributors.
- Lees, J. A. (2005). *Children with Acquired Aphasias*. London: Whurr Publishers Ltd.
- Leonard, L. B. (1998). *Children with Specific Language Impairment*. Massachusetts: MIT Press.
- Lynn, A. (2008). *Autism and Asperger Syndrome*. San Diego: Plural Publishing.
- Norbury, P. R. & Courtenay F. (2012). *Language Disorders from Infancy through Adolescence: Listening, Speaking, Reading, Writing, and Communicating*. Missouri: Elsevier Mosby.
- Owens, J. R., Metz, D.E. & Farinella, K.A. (2011). *Introduction to Communication Disorders-A Lifespan Evidence Based Perspective*. Upper Saddle River, NJ: Pearson Education, Inc.
- Ozonoff, S., Dawson, G., Mc Partland, J. C. (2015). *A Parent's Guide to High-Functioning Autism Spectrum Disorder: How to Meet the Challenges and Help Your Child Thrive*. New York: The Guilford Press.
- Paul, R. (2007). *Language Disorders from a Developmental Perspective: Essays in Honor of Robin S. Chapman*. New York: Lawrence Erlbaum Associates.
- Paul, T. G. (2011). *A Beginner's Guide to Autism Spectrum Disorders: Essential Information for Parents and Professionals*, London: Jessica Kingsley Publishers.
- Peeters, T. (1997). *Autism-from theoretical understanding to educational intervention*. San Diego: Singular Publishing Group Inc.
- Rondal, S. & Edwards, L. (1997). *Language in mental retardation*. London: Singular Pub. Inc.
- Shyamala, K. Chengappa. (2012). *Language disorders in Children*. Mysore, India: Central Institute of Indian Languages.
- Vallikkat, S. (2012). *Handbook of Learning Disability*. New Delhi: Kanishka Publishers and Distributors.
- Vinson, B. P. (2012). *Language disorders across the lifespan*. 3rd Ed. USA: Delmar Cengage Learning.

B.ASLP ISS Scheme - 4 years programme

Unit 4

- Berry, M. F. (1969). *Language disorders in children: The bases & diagnosis*. New York: Appleton Century Crofts.
- Bloom, L. & Lahety, M. (1978). *Language development and language disorders*. New York: John Wiley & Sons Inc.
- Crystal, D (1982). *Profiling linguistic disability*. London: Edward Arnold.
- Crystal, D., Fletcher, P. & Garman, M (1976). *The grammatical analysis of language disability*. London: Edward Arnold.
- Damico, J. S., Muller, N., & Ball, M. J. (2010). *The Handbook of Language and Speech disorders*, UK: Blackwell Publishing Limited.
- Fillmore, C. & Wang, W. (1982). *Individual differences in language ability and language behaviour*. New York: Academic Press.
- Gallagher, T. M. (1991). *Programmatics of language: Clinical practice issues*. California: Singular Pub. Co.
- Haynes, W. O. & Pindzola, R. H. (2004). *Diagnosis and evaluation in speech pathology*. 6th Ed. USA. Library of Congress Cataloging.
- Hegde, M. N. & Christine, M. A. (2006). *Language Disorders in Children: An Evidence Based Approach to Assessment and Treatment*. Boston: Pearson Education, Inc.
- Hegde, M. N. & Davis, D. (2005). *Clinical methods and practicum in speech-language pathology*. 4th Ed. New York: Thomson Delmar Learning.
- Holland, A. L. (Ed) (1984). *Language disorders in children: Recent advances*. California: College Hill Press.
- Johns, D. F. (1978). *Clinical management of neurogenic communicative disorders*. Boston: Little Brown & Co.
- Kaderavek, J. N. (2015). *Language disorders in children: Fundamental concepts of assessment and intervention*. 2nd Ed. USA: Pearson Education Inc.
- Lee, W. A. (2010). *A Best Practice Guide to Assessment and Intervention for Autism and Asperger Syndrome in Schools*. London: Jessica Kingsley Publishers.
- Rhea, P. & Cascella, P. W. (2007). *Introduction to Clinical Methods in Communication Disorders*. 2nd Baltimore: Maryland. Paul H. Brookes.

Unit 5

- Fay et al. (1995). *Language intervention: Preschool through elementary years communication & language intervene-tion series*. USA: Brookes Pub Co.
- George J. D. & Lee, K. (2011). *Young Children with ADHD: Early Identification and Intervention*. Washington DC: American Psychological Association.
- Hegde, M. N. & Davis, D. (2005). *Clinical methods and practicum in speech-language pathology*. 4th Ed. New York: Thomson Delmar Learning.
- Hegde, M. N. (1985). *Treatment Procedures in Communicative Disorders*. London: Taylor and Francis Ltd.
- Hegde, M. N. (2008). *Pocket guide to Treatment in Speech Language Pathology*. New York: Thomson Delmar Learning.
- Lovaas, O (1977). *The autistic child: Language development through behavior modification approaches*. San Diego: Singular Pub Co.
- Nelson, N. W. (1998). *Childhood language disorders in context: Infancy through adolescence*. 2nd Ed. USA: Allyn & Bacon.
- Ross, P. & Swain, G. (1992). *Cognitive and linguistic improvement program*. San Diego: Singular Pub Co.
- Waterhouse, S. (2001). *A Positive Approach to Autism*. London: Jessica Kingsley.

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PAPER: STATISTICAL METHODS FOR COMMUNICATION SCIENCES AND DISORDERS

Objectives:

After studying this course, the student should be able to:

- Write the basics of Statistics and its application in the field of Communication Sciences and Disorders
- Calculate basic statistical measures
- Interpret the statistical results at basic level and make inferences

Unit 1: Introduction, Data collection and Presentation - 12hrs

- 1.1 Introduction - Origin, Definition, Scope, Limitations of Statistics
- 1.2 Applications of Statistics in the field of Communication Sciences and Disorders
- 1.3 Scales of measurements – Nominal, Ordinal, Interval and Ratio scales
- 1.4 Descriptive and Inferential statistics
- 1.5 Data – Classification, Discrete and Continuous measurements, types of Class intervals
- 1.6 Data Collection – Primary and Secondary methods, Introduction to Sampling
- 1.7 Presentation of frequency data –Histogram, Frequency polygon, Frequency Curve, Ogives.

Unit 2: Measures of Central Tendency and Dispersion - 12hrs

- 2.1 Measures of central tendency – meaning and need, types: Arithmetic mean, Median, Mode (numerical approach), merits and demerits of each measure
- 2.2 Measures of Dispersion – meaning and need, types: Range, Quartile Deviation, Average Deviation, Standard Deviation (numerical approach), merits and demerits of each measure

Unit 3: Normal Distribution and Variants from Normal Distribution -10hrs

- 3.1 General Properties of Normal Probability Curve
- 3.2 Illustration of area under the normal Probability Curve, Introduction to Test of Normality
- 3.3 Variants from the normal distribution
 - Skewness, Karl Pearson's and Bowley's Coefficient of Skewness
 - Kurtosis, Coefficient of Kurtosis
- 3.4 Factors contributing for non-normal distribution

Unit 4: Correlation and Regression -10 Hrs

- 4.1 Correlation
 - Meaning and brief overview of various types of correlation (Positive, Negative, Total, Partial, Simple, Multiple, Linear, Non-linear)
 - Methods of studying simple linear correlation - Scatter plots, Product-moment correlation, Variation of product-moment correlation, rank correlation (numerical approach)
- 4.2 Introduction to Simple Linear Regression

Unit 5: Testing of Hypotheses for two means - 10 Hrs

- 5.1 Introduction to Testing of Hypotheses
- 5.2 Null and alternative hypotheses
- 5.3 Level of Significance
- 5.4 Procedure for testing of hypotheses
- 5.5 Testing the significance between two means (numerical approach) – Large Sample tests (z test) and Small Sample tests (t-test: Single Sample, Independent samples, Paired samples)
- 5.6 Advantages and Limitations of Parametric and Non-parametric tests

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REFERENCE

Unit 1

- Gupta, K.R. (2014). Statistics - Volume 1. New Delhi: Atlantic Publishers & Distributors (P) Ltd.
- Gupta, S.P. (1977). Practical Statistics. New Delhi: S.Chand & Company Ltd.
- Kapur, S.K. (2008). Elements of Practical Statistics. 3rd Ed. New Delhi: Oxford & IBH Publishing Co.

Unit 2

- Gupta, K.R. (2014). Statistics - Volume 1. New Delhi: Atlantic Publishers & Distributors (P) Ltd.
- Gupta, S.P. (1977). Practical Statistics. New Delhi: S.Chand & Company Ltd.
- Kapur, S.K. (2008). Elements of Practical Statistics. 3rd Ed. New Delhi: Oxford & IBH Publishing Co.

Unit 3

- Garrett, H.E & Woodworth, R.S. (1979). Statistics in Psychology and Education. 9th Ed. Bombay: Feffer & Simons.
- Gupta, K.R. (2014). Statistics - Volume 1. New Delhi: Atlantic Publishers & Distributors (P) Ltd.
- Gupta, S.P. (1977). Practical Statistics. New Delhi: S.Chand & Company Ltd.
- Salkind, N.J (2000). Statistics for people who (think they) hate statistics. California: SAGE Publications.

Unit 4

- Garrett, H.E & Woodworth, R.S. (1979). Statistics in Psychology and Education. 9th Ed. Bombay: Feffer & Simons.
- Gupta, K.R. (2014). Statistics - Volume 1. New Delhi: Atlantic Publishers & Distributors (P) Ltd.
- Gupta, S.P. (1977). Practical Statistics. New Delhi: S.Chand & Company Ltd.
- Salkind, N.J (2000). Statistics for people who (think they) hate statistics. California: SAGE Publications.

Unit 5

- Garrett, H.E & Woodworth, R.S. (1979). Statistics in Psychology and Education. 9th Ed. Bombay: Feffer & Simons.
- Gibbons, J.D (1993). Non-parametric Statistics- An Introduction. California: SAGE Publications.
- Gupta, K.R. (2014). Statistics - Volume 2. New Delhi: Atlantic Publishers & Distributors (P) Ltd.
- Kapur, S.K. (2008). Elements of Practical Statistics. 3rd Ed. New Delhi: Oxford & IBH Publishing Co.
- Maxwell, D.L & Satake, E (2006). Research and Statistical Methods in Communication Sciences and Disorders. Canada: Thomson Publications
- Salkind, N.J (2000). Statistics for people who (think they) hate statistics. California: SAGE Publications.

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PAPER: HEARING AIDS

Objectives:

After completion of this course the students should be able to

- Identify different types of hearing aids and explain their components
- Carry out Electro-acoustic measurement and categorize the hearing aids accordingly
- Describe different signal processing strategies and their relevance in different listening conditions
- Cross check whether the hearing aids meet the standards

Unit 1: Basics of Hearing aid - 10 Hrs

- 1.1 Historical development of hearing aids- Mechanical, Analogue, Digital Hearing aid
- 1.2 Basic components of hearing aids –microphones, amplifier, receiver/vibrator, cords, volume control, telecoil, and batteries.

Unit 2: Classification and types of Hearing Aids - 10 Hrs

- 2.1 Body level, ear level hearing aids (BTE, ITE, ITC, CIC, IIC, RIC, RITE)
- 2.2 Analogue, Programmable and Digital Hearing aid
- 2.3 Binaural, pseudobinaural, monaural
- 2.4 Master hearing aids
- 2.5 Modular hearing aids
- 2.6 Group Amplification - hard wire, induction loop, FM, infrared

Unit 3: Signal Processing in hearing aids – 12 Hrs

- 3.1 Artificial Intelligence in Hearing aids
- 3.2 Signal processing in hearing aids - BILL, TILL PILL
- 3.3 Signal enhancing technology- Digital Noise reduction, Directionality of Microphones, Speech cue enhancement

Unit 4: Compression in Hearing aids and other signal processing - 12 Hrs

- 4.1 Output limiting: peak clipping, compression (Input/output compression, compression ratio, compression knee point, WDRC, Compression limiting, high level compression, low level compression), Expansion Hearing Aids
- 4.2 Extended low frequency amplification, frequency lowering techniques
- 4.3 Routing of signals, head shadow/baffle/diffraction effects

Unit 5: Electroacoustic measurement of Hearing aids - 10 Hrs

- 5.1 Electro-acoustic measurements for hearing aids Purpose, parameters, instrumentation, procedure (analogue and digital), variables affecting EAM
- 5.2 Standards on Electro-acoustic measurements of Hearing aids (BIS, IEC and ANSI standards)
- 5.3 Environmental tests for Hearing aids

PRACTICUM

1. Familiarization of components used in hearing aids- Microphones, Amplifiers, receivers, vibrator, cords, batteries, checking voltage/continuity of battery, checking continuity of cords
2. Familiarization on programmable and digital hearing aids.
3. Electroacoustic Measurement
 - Measurement of EAM such as output, gain, frequency range, distortion, Equivalent input noise
 - Use of different couplers, hearing aid & earmould combinations
 - Effect of peak clipping, compression on input – output function
 - Effect of directional vs omnidirectional mic
 - Effect of S vs V cord

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- Calculation of battery life of different types of batteries.
- 4. Familiarization of different models of hearing aids with respect to the component
- 5. Calculation of gain and output parameters manually
- 6. Troubleshooting of hearing aids

REFERENCES

Common to all units

- Hodgson, W.R & Skinner, P.H (1977, 1981). Hearing aid assessment and use in audiologic habilitation. Baltimore: Williams & Wilkins.
- Katz, J (1978, 1985, 1994). Handbook of clinical audiology. 2nd, 3rd and 4th Edn. Baltimore: Williams & Wilkins
- Pollack, M.C (1980). Amplification for the hearing impaired. NY: Grune & Stratton.
- Valente, M., Dunn, H.H & Roeser, R.J (2000). Audiology-treatment. NY: Thieme.

Unit 1:

- Donnelly, K (1974). Interpreting hearing aid technology. Springfield: C.C Thomas

Unit 2:

- Bess, F.H et al. (1981). Amplification in education. Washington: Alexander Graham Bell Association for the Deaf.
- Markides, A (1977). Binaural hearing aids. London: Academic Press Inc.
- Sanders, D.A (1993). Management of the hearing handicapped: From infants to elderly. 3rd Edn. Englewood Cliffs: Prentice Hall Inc.
- Skinner, M.W (1988). Hearing aid evaluation. NJ: Prentice Hall
- Stuebaker, G.A & Hochberg, I (1993). Acoustical factors affecting hearing aid performance. 2nd Ed. MA: Allyn & Bacon.
- Valente, M (1996). Hearing aids: Standards and options. NY: Thieme Medical Publishers Inc
- James M Kates (2008). Digital Hearing aids. United Kingdom : Plural Publishing,
- Arthur Schaub (2008). Digital Hearing Aids. NY: Thieme Medical Publishers Inc

Unit 3:

- Hull, R.H (1982). Rehabilitative audiology. NY: Grune & Stratton
- Levitt, H., Pickett, J.M & Houde, R.A (1980). Sensory aids. NY: John Wiley, Inc.
- Robert E. Sandlin (1999). Text book of Hearing aid amplification. Singular Publishing group, Canada.
- Robert E. Sandlin (1993). Understanding digitally programmable hearing aid. MA: Allyn & Bacon.

Unit 4:

- Lovenbruck, A.M & Madell, I.R (1981). Hearing aid dispensing for audiologists: A guide for clinical service. NY: Grune & Stratton.
- Harvey Dillon(2012):Hearing Aids. NY: Thieme Medical Publishers Inc

Unit 5:

- Sanders, D.A (1993). Management of the hearing handicapped: From infants to elderly. 3rd Edn. NJ, Englewood Cliffs: Prentice Hall Inc
- Schweitzer, H.C (1986). Time – The 3rd dimension of hearing aid performance. Hearing Instruments, 37(1), 17
- Stuebaker, G.A & Hochberg, I (1993). Acoustical factors affecting hearing aid performance. 2ndEd. MA: Allyn & Bacon.
- Valente, M (1996). Hearing aids: Standards and options. NY: Thieme Medical Publishers Inc.

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PAPER: PAEDIATRIC AUDIOLOGY

Objectives:

After the successful completion of this course, a student should be able to

- Take case history for paediatric population
- Carry out hearing screening of infants, neonates and school going children by making use of behavioral and objective tests and Interpret the results
- Carry out diagnostic hearing testing of infants, neonates and school going children using behavioral and objective tests and Interpret the results
- Modify and carry out vestibular assessment in children

Unit 1: Development of Human Auditory System -10 hours

- 1.1 Introduction to paediatric audiology and basic terminologies.
- 1.2 Embryological development of the human auditory and vestibular systems, and the relevance of this information with special reference to syndromes
- 1.3 Maturation of the auditory nervous system and its relevance in paediatric hearing
- 1.4 Development of auditory behaviour – prenatal hearing, newborn hearing, auditory development (minimum response level, localization, perception of speech, need for multiple cues).

Unit 2: Early Identification of Hearing Loss -10 hours

- 2.1 Need for early identification with special reference to conductive and sensorineural hearing loss, mild hearing losses, sloping hearing losses, fluctuating hearing losses and unilateral hearing loss
- 2.2 Recommendations of the Joint committee on infant screening- various position statements showing its evolution
- 2.3 High risk registers and its utility in early identification.
 - Commonly used high risk registers
 - Sensitivity and specificity
 - Relevance in Indian scenario

Unit 3: Hearing Screening -10 hrs

- 3.1 Universal newborn hearing screening- concept, history, present scenario and hurdles.
- 3.2 Behavioral screening tests (awakening test, bottle feeding test, behavioral observation audiometry)- stimuli, procedures, recording of response, interpretation of results.
- 3.3 Objective screening tests (e.g., Crib-O-Gram, auditory cradle, accelerometer recording system, reflex inhibition audiometry, immittance, reflectometry, wide-band reflectance, OAE, evoked potentials)
- 3.4 School screening
 - Screening for hearing sensitivity- behavioral and objective tests
 - Screening for (C)APD- Need, tests used (checklists & behavioral screening tests)

Unit 4: Diagnostic Evaluations- Behavioural Tests -12 hrs

- 4.1 Behaviour observation audiometry
- 4.2 Conditioning techniques:
 - Visual reinforcement audiometry and its modifications including CORA
 - PIWI and peep show audiometry
 - TROCA
 - Play audiometry
- 4.3 Modifications required for multiple disabilities
- 4.4 Speech audiometry
 - 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.

4.5 Functional hearing loss- signs & symptoms and tests used

4.6 Balance assessment: need, causes, behavioral tests

Unit 5: Diagnostic Evaluations- Objective tests -12 hrs

5.1 Immittance evaluation- including high frequency probe-tone tympanometry, reflexometry, wide-band reflectance

5.2 OAEs (TEAOAE & DPOAE)

5.3 Evoked potentials (ABR, ASSR & ALLR)

5.4 Objective tests for vestibular assessment (cVEMP, oVEMP, vHIT, Calorics & tests for central vestibular assessment)

PRACTICUM

1. Go through the developmental changes during the embryonic period through the use of slides and videos.
2. Take case history for paediatric population.
3. Administration of HRR on caregivers or significant others of at least 2 normal hearing children.
4. Administer hearing screening tests using instruments and noise makers in at least five normal hearing children.
5. Screening using OAE & ABR in 2 normal hearing children.
6. Administration of ABR and OAE on 2 normal hearing children.
7. To observe recording and interpretation of ALLR on children.
8. Carryout BOA on 2 normal hearing children.
9. Carryout VRA, play audiometry on 2 normal hearing children.
10. Speech Audiometry in children – go through the speech material in Indian languages & those used abroad- administer the SDT, SRT and SIS on at least 2 children.
11. Go through the checklists and tests for (C)APD screening.
12. Observation of diagnostic tests for assessment of (C)APD on clients.
13. Observe practical demonstration of subjective and objective tests for vestibular assessment.

REFERENCE

Common to all units

- Martin, F. N (1978). Paediatric audiology. New Jersey: Prentice Hall.
- Martin, F. N. (1994). Introduction to audiology. 5thEdn. New Jersey: Prentice Hall.
- Martin, F.N. (Ed) (1987). Hearing disorders in children: Paediatric audiology. Austin: Pro. Ed.
- Newton, V. E. (2002). Paediatric audiological medicine. Philadelphia, PA: Whurr Publishers.
- Newton, V. E. (2009). Paediatric audiological medicine, 2nd Ed. West Sussex, UK: John Wiley & Sons, Ltd.
- Northern, J., & Downs, M. P. (2014). Hearing in children. 6thEd. San Diego, CA: Plural Publishing, Inc.
- Seewald, R. & Tharpe, A. M. (2011). Comprehensive handbook of pediatric audiology. San Diego, CA: Plural Publishing, Inc.

Unit 1: Development of Human Auditory System

- Gerber, S. E. & Mencher, G. T. (1983). The development of auditory behavior. New York: Grune & Stratton.

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Unit 2: Early Identification of Hearing Loss

- Bess, F.H (1977). Childhood deafness. New York: Grune & Stratton.
- Bluestone, C. D., & Klein, J. O. (2007). Otitis media in infants and children, 4th Ed. Italy: BC Decker Inc.
- Dale, D. M. C. (1970). Applied audiology for children. 2nd Ed. Springfield: C.C. Thomas.
- Davis, J. M. & Hardick, E. J. (1981). Rehabilitative audiology for children & adults. NY: John Wiley & Sons.
- Ling, D. (1978). Speech & hearing-impaired child. Washington: Alexander Graham Bell Association for the Deaf.
- Morgan, S. H. (1998). Universal new born hearing screening. Seminars in hearing. Vol.19(2).
- Rossetti, L. (1986). High risk infants: Identification, assessment and intervention. Boston: A College-Hill Publication
- Roush, J. (2001). Screening for hearing loss and otitis media. San Diego, CA: Singular Thomson Learning.
- Stokes, J. (2000). Hearing impaired infants: support in the first eighteen months. London: Whurr Publishers Ltd.

Unit 3: Hearing Screening

- Bess F. H. (1988). Hearing impairment in children. Maryland: York Press Inc.
- Eisenberg, R. B. (1976). Auditory competence in early life: the roots of communicative behavior. Baltimore: University Park Press.
- Gerber, S. E. (1982). Audiometry in infancy. New York: Grune & Stratton.
- Gerber, S. E. & Mencher, G. T. (1978). Early diagnosis of hearing loss. New York: Grune & Stratton.
- Hayes, D. & Northern, J. L. (1996). Infants and hearing. San Diego: Singular Publishing Group Inc.
- Mencher, G. T. (1976). Early identification of hearing loss. Basel: S. Karger
- Parthasarathy, T. K. (2006). An introduction to auditory processing disorders in children. New Jersey, USA: Lawrence Erlbaum Associates, Inc.
- Roeser, R. J. & Downs, M. P. (2004). Auditory disorders in school children: the law, identification, remediation. 4th Ed. New York, NY: Thieme Medical Publishers, Inc.
- Roush, J. (2001). Screening for hearing loss and otitis media. San Diego, CA: Singular Thomson Learning.
- Spivak, L. G. (1998). Universal newborn hearing screening. New York, NY: Thieme Medical Publishers, Inc.

Unit 4: Diagnostic Evaluations- Behavioural Tests

- Desmond A. L. (2011). Vestibular Function: Clinical and Practice Management, 2nd edition. New York: Thieme Medical Publishers, Inc.
- Eagles, E. L. (1963). Hearing sensitivity and related factors in children. Pennsylvania: University of Pittsburgh.
- Fulton, R. T. & Lloyd, L. L. (1969). Audiometry assessment of the difficult to test. Baltimore: Williams & Wilkins Co.
- Fulton, R. T. & Lloyd, L. L. (1969). Audiometry for the retarded with implications for the difficult to test. Williams & Wilkins Co.
- Gerer, S. E. & Mencher, G. T. (1978). Early diagnosis of hearing loss. New York: Grune & Stratton.
- Kemp, D. (1973). Evaluation of hearing impaired children. Denmark: 5th Danavox Symposium.
- McCormick, B. (2004). Paediatric Audiology 0-5 Years, 3rd Ed. London: Whurr Publishers Ltd.
- Moog, J. S. & Geers, A. E. (1990). Early speech perception test for the profoundly hearing-impaired children. St. Louis: Central Institute for the Deaf.
- Sanders, D. A. (1993). Management of hearing handicap: infants to elderly. 3rd Ed. New Jersey; Prentice Hall.

B.ASLP ISS Scheme - 4 years programme

- Shoup, A. & Roeser, R. T. (2000). Audiological evaluation in special population. In R. R. Roser, M. Valente, H. Hosford-Dunn (Eds). Audiological diagnosis. New York: Thieme Medical Publishers, Inc.
- Stokes, J. (2000). Hearing impaired infants – support in the first eighteen months. London: Whurr Publishers Ltd.

Unit 5: Diagnostic Evaluations- Objective tests

- Beck, D. L., Petrak, M. R., & Bahner, C. L. (2010). Advances in pediatric vestibular diagnosis and rehabilitation. *Hearing Review*, 17(11), 12-16.
- Casselbrant, M. (2013). Vestibular migraine. In: R. C. O'Reilly, T. Morlet, S. L. Cushing, Eds. *Manual of Pediatric Balance Disorders*. San Diego: Plural Publishing.
- Cheatum, B. A., & Hammond A. A. (2000). Physical Activities for Improving Children's Learning and Behavior: A Guide to sensory motor development. Pp. 143-184.
- Cushing, C. L., Gordon, K. A., Rutka, J. A., James, A. L., & Papsin, B. C. (2013). Vestibular end-organ dysfunction in children with sensorineural hearing loss and cochlear implants—An expanded cohort and etiologic assessment. *Otology and Neurotology*, 34, 422-428.
- Desmond A. L. (2011). *Vestibular Function: Clinical and Practice Management*, 2nd edition. New York: Thieme Medical Publishers, Inc.
- Fife, T. D., Tusa, R. J., Furman, J. M., Zee, D. S., Frohman, E. et al. (2000). Assessment: Vestibular testing techniques in adults and children. *Neurology*, 55(10), 1431-1441.
- Gans, R.E. (2014) Evaluation and Management of Vestibular Function in Infants and Children with Hearing Loss, In J. R. Madell & C. Flexer. *Pediatric Audiology Diagnosis, Technology and Management*, New York: Thieme Medical Publishers, Inc.
- Hall III, J. W. & Swanepoel, D. W. (2011). *Objective Assessment of Hearing*. San Diego: Plural Publishing.
- Hall III, J. W. (2006). *New Handbook of Auditory Evoked Responses*. San Diego: Plural Publishing.
- McCormick, B. (2004). *Paediatric Audiology 0-5 Years*, 3rd Edn. London: Whurr Publishers Ltd.
- Melagrana, A., D'Agostino, R., Tarantino, V., Taborelli, G., & Calevo, M. G. (2000). Monothermal air caloric test in children. *International Journal of Pediatric Otorhinolaryngology*, 62(1), 11-15.
- Nandi, R., & Luxon, L. M. (2008). Development and assessment of the vestibular system. *International Journal of Audiology*, 47, 566-577.
- O'Reilly, R. C. et al. (2010). Prevalence of vestibular and balance disorders in children. *Otology and Neurotology*, 31(9), 1441-1444.
- Rine, R. M. (2000). Evaluation and Treatment of Vestibular and Postural Control Deficits in Children, In S. J. Herdman. *Vestibular Rehabilitation*, Philadelphia: FA Davis.
- Snashall, S. E. (1983). Vestibular function tests in children. *Journal of Royal Society of Medicine*, 76, 555-559.
- Szirmai, A. (2010). Vestibular disorders in childhood and adolescents. *European Archives of Otorhinolaryngology*. published online May 21, 2010. Available at: www.springerlink.com/content/k4550727t3200r35.
- Valente, L. M. (2011). Assessment techniques for vestibular evaluation in pediatric patients. *Otolaryngology Clinics of North America*, 44(2), 273-290.
- Wiener-Vacher, S. R. (2008). Vestibular disorders in children. *International Journal of Audiology*, 47, 578-583.

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Semester VI

PAPER: DYSARTHRIA AND APRAXIA

Objectives

After studying this paper at the end of the semester, the students should be able to

- Demonstrate an understanding of the nature of dysarthria and apraxia including classification, characteristics and etiologies
- Understand the normal and abnormal aspects of swallowing
- Assess and diagnose dysarthria, apraxia and swallowing disorders
- Understand the principles of speech therapy and apply the appropriate rehabilitation techniques to treat the persons with dysarthria and/or apraxia
- Learn different intervention approaches in the comprehensive management of dysarthria and Apraxia
- Understand different rehabilitation methods available to treat swallowing disorders

Unit 1: Introduction to Motor Speech Disorders in adults -10 Hrs

1.1 Dysarthria in adults:

- Definition and different classification systems of dysarthria in adults
- Types of dysarthria in adults and their neurological bases
- Nonspeech and speech characteristics in different types of dysarthria
- Acoustic and physiological findings in different types of dysarthria.

1.2 Apraxia of speech in adults (AOS):

- Definition of verbal and nonverbal apraxia of speech.
- Different types of apraxia in adults and their neurological bases.
- Nonspeech and speech characteristics of AOS.
- Acoustic and physiologic findings in AOS.

1.3 Physiology of normal swallow and its characteristics in different neurological conditions such as ALS, Parkinson's disease, Huntington's disease, multiple sclerosis, apraxia.

Unit 2: Etiologies of dysarthria and apraxia of speech in adults – 12 Hrs

2.1 Common Causes leading to any of the dysarthria and apraxia : Traumatic brain injury (TBI), Cerebrovascular accident (CVA), Infections such as meningitis, encephalitis, and HIV, Neoplasms, Toxic agents.

2.2 Common Neurogenic conditions leading to dysarthria

- Flaccid dysarthria: Muscular dystrophy, polymyositis, myasthenia gravis, poliomyelitis, polyneuritis (Guillain-Barre syndrome)
- Ataxic telangiectasia, Von-Hippel Lindau disease.
- Hypokinetic dysarthria: Parkinson's disease
- Hyperkinetic dysarthria: Tardive dyskinesia, Huntington's disease, Sydenham's chorea, Meige syndrome, Tourette's syndrome.

2.3 Mixed dysarthria: Motor neurone disease [Amyotrophic multiple sclerosis (ALS), Primary lateral sclerosis (PLS), Progressive bulbar palsy], Corticobasal Degeneration (CBD), Wilson's disease, Neurosyphilis.

Unit 3: Assessment of dysarthria and apraxia of speech -12 Hrs

3.1 Assessment of dysarthria

- Perceptual analysis – examination of the speech systems during speech and nonspeech (oromotor and orosensory) activities, standard tests and methods, speech intelligibility assessment scales.
- Instrumental analysis-
 - Aerodynamic
 - Electromyographic
 - Kinematic
 - Acoustic

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- 3.2 Advantages and disadvantages of instrumental and perceptual analysis of speech.
- 3.3 Assessment of apraxia of speech-standard tests and scales, subjective methods and protocols.
- 3.4 Differential diagnosis of dysarthria from functional articulation disorders, apraxia of speech, aphasia and allied disorders.
- 3.5 Evaluation of swallowing disorders (Dysphagia)
 - Subjective methods including standard tests, protocols and screening procedures.
 - An overview of Objective methods of assessment

Unit 4: Management of dysarthria and apraxia of speech – 10 Hrs

- 4.1 Management of dysarthria –
 - General intervention principles
 - Behavioural approaches (vegetative exercises, oral sensorimotor facilitation techniques, compensatory and facilitatory techniques for the correction of respiratory, phonatory, resonatory, articulatory & prosodic errors)
 - Prosthetic approaches
- 4.2 Management of apraxia of speech- principles of motor learning, different behavioral management approaches including articulatory kinematic approaches, rate and /or rhythm approaches.

Unit 5: Other intervention approaches - 10Hrs

- 5.1 Application of Augmentative and Alternative Communication (AAC) systems for adult dysarthric and apraxic individuals –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.
- 5.2 Medical management including surgical and pharmacological options available for dysarthria and apraxia of speech.
- 5.3 Management of swallowing disorders (Dysphagia) including
 - Prosthetic management
 - Indirect swallowing therapy
 - Direct swallowing therapy

PRACTICUM

1. Assess any two clients with dysarthria, apraxias and swallowing disorders (dysphagia) using appropriate standardized tests or protocols.
2. Perceptual analysis of speech of any one client with dysarthria and /apraxia
3. Instrumental analysis of speech of anyone client with dysarthria/apraxia
4. Submission of public education pamphlet on any one aspect of dysarthria or apraxia or swallowing disorders (dysphagia).
5. Counseling a client with dysarthria or Apraxia
6. Submission of capstone on one client with motor speech disorders

REFERENCES

Unit 1:

- Duffy, J.R. (2013). *Motor speech disorders: Substrates, differential diagnosis and management* (3rd Ed). St.Louis, USA: Elsevier.
- Freed, D. (2000). *Motor speech disorders: Diagnosis and management*. Newyork, USA: Delamr cengage learning.
- Dworkin, J.P (1991). *Motor speech disorders: A treatment guide*. St. Louis: Mosby Year Book
- Berry, W.R (1983). *Clinical dysarthria*. San Diego: College Hill Press
- Bickerstaff, E.R & Spillane, J.A (1989). *Neurological examination in clinical practice*. Bombay: Oxford University Press.

B.ASLP ISS Scheme - 4 years programme

- Darby, J.K (Ed) (1981). *Speech evaluation in psychiatry*. New York: Grune& Stratton.
- Edward, M (1984). *Disorders of articulation: Aspects of dysarthria and verbal dyspraxia*. New York: Springer Verlag.
- Kuehn, D.P., Lemme& Baumgartner (Ed) (1989).*Neural basis of speech, hearing and language*. Boston: College Hill Press.
- Love, R.J & Webb, W.G (1992).*Neurology for the speech, language pathologist*. Boston: Butterworth-Heinemann.
- McNeil, M et al (Ed) (984).*The dysarthrias*.San Diego: College Hill Press
- McNeil. R. M. (2009). *Clinical management of sensorimotor speech disorders (2nd Ed.)*.New York: Thieme Medical Publishers, Inc.
- Murdoch, B.E (1990). *Acquired speech and language disorders: A neuroanatomical and functional neurological approach*. London: Chapman & Hall.
- Netsell, R (1986). *A neurologic view of speech production and the dysarthrias*. San Diego: College Hill Press.
- Wertz Lapointe&Rosenbek (1988). *Apraxia of speech in adults*. New York: Springer Verlag.
- Johns, E (Ed) (1989). *Clinical management of neurogenic communication disorders*. London: Bosby Book Publishers.
- Goldenberg, G. (2013). *Apraxia. The cognitive side of motor control*. Oxford: Oxford university press.
- Corbin-Lewis, k., Liss, M.J. (2015). *Clinical anatomy and physiology of the swallow mechanism*. (3rd Ed). *Stamford: Cengage learning*.
- Steeffel, J.S. (1981). *Dysphagia rehabilitation for neurologically impaired adults*. Illinois: Charles C Thomas publishers.
- Logemann, J. A. (1998). *Evaluation and treatment of swallowing disorders (2nd Ed.)*. Texas: Pro-ed. An international publisher.
- Yorkston, M.K., miller, M.R., Strand, A.E., & Britton, D. (2013). *Management of speech and swallowing disorders in degenerative diseases (3rd Ed.)*. Texas: Pro-ed. An International publisher.
- Rosenbek, J.C., & Jones, N. H. (2009). *Dysphagia in movement disorders*. San Diego: Plural publishing.

Unit 2:

- Duffy, J.R. (2013). *Motor speech disorders: Substrates, differential diagnosis and management (3rd Ed)*. St.Louis, USA: Elsevier.
- Freed, D. (2000). *Motor speech disorders: Diagnosis and management*. Newyork, USA: Delamr cengage learning.
- Dworkin, J.P (1991). *Motor speech disorders: A treatment guide*. St. Louis: Mosby Year Book.
- McNeil, M et al (Ed) (984).*The dysarthrias*. San Diego: College Hill Press
- Murdoch, B.E (1990). *Acquired speech and language disorders: A neuroanatomical and functional neurological approach*. London: Chapman & Hall.
- Netsell, R (1986). *A neurologic view of speech production and the dysarthrias*. San Diego: College Hill Press.
- Wertz Lapointe&Rosenbek (1988). *Apraxia of speech in adults*. New York: Springer Verlag.
- Johns, E (Ed) (1989). *Clinical management of neurogenic communication disorders*. London: Bosby Book Publishers.

Unit 3:

- Duffy, J.R. (2013). *Motor speech disorders: Substrates, differential diagnosis and management (3rd Ed)*. St.Louis, USA: Elsevier.
- Freed, D. (2000). *Motor speech disorders: Diagnosis and management*. Newyork, USA: Delamr cengage learning.
- McNeil. R. M. (2009). *Clinical management of sensorimotor speech disorders (2nd Ed.)*.New York: Thieme Medical Publishers, Inc.
- Murdoch, B.E (1990). *Acquired speech and language disorders: A neuroanatomical and functional neurological approach*. London: Chapman & Hall

B.ASLP ISS Scheme - 4 years programme

- Yorkston, M.K., Beukelman, R.D., Strand, E. A., & Hakel, M. (2010). Management of motor speech disorders in children and adults (3rd Ed.). Texas: Pro-ed. An International Publisher.
- Weismer, G. (2007). Motor speech disorders. California: Plural publishing.
- Wertz, Lapointe & Rosenbek (1988). Apraxia of speech in adults. New York: Springer Verlag.
- Corbin-Lewis, k., Liss, M.J. (2015). Clinical anatomy and physiology of the swallow mechanism. (3rd Ed). Stamford: Cengage learning.
- Steeffel, J.S. (1981). Dysphagia rehabilitation for neurologically impaired adults. Illinois: Charles C Thomas publishers.
- Logemann, J. A. (1998). Evaluation and treatment of swallowing disorders (2nd Ed.). Texas: Pro-ed. An international publisher.
- Yorkston, M.K., miller, M.R., Strand, A.E., & Britton, D. (2013). Management of speech and swallowing disorders in degenerative diseases (3rd Ed.). Texas: Pro-ed. An International publisher.
- Rosenbek, J.C., & Jones, N. H. (2009). Dysphagia in movement disorders. San Diego: Plural publishing.

Unit 4:

- Duffy, J.R. (2013). Motor speech disorders: Substrates, differential diagnosis and management (3rd Ed). St.Louis, USA: Elsevier.
- Freed, D. (2000). Motor speech disorders: Diagnosis and management. Newyork, USA: Delamr cengage learning.
- McNeil. R. M. (2009). Clinical management of sensorimotor speech disorders (2nd Ed.).New York: Thieme Medical Publishers, Inc.
- Murdoch, B.E (1990). Acquired speech and language disorders: A neuroanatomical and functional neurological approach. London: Chapman & Hall
- Yorkston, M.K., Beukelman, R.D., Strand, E. A., & Hakel, M. (2010). Management of motor speech disorders in children and adults (3rd Ed.). Texas: Pro-ed. An International Publisher.
- Weismer, G. (2007). Motor speech disorders. California: Plural publishing.
- Wertz, Lapointe & Rosenbek (1988). Apraxia of speech in adults. New York: Springer Verlag.
- Corbin-Lewis, k., Liss, M.J. (2015). Clinical anatomy and physiology of the swallow mechanism. (3rd Ed). Stamford: Cengage learning.
- Steeffel, J.S. (1981). Dysphagia rehabilitation for neurologically impaired adults. Illinois: Charles C Thomas publishers.
- Logemann, J. A. (1998). Evaluation and treatment of swallowing disorders (2nd Ed.). Texas: Pro-ed. An international publisher.
- Yorkston, M.K., miller, M.R., Strand, A.E., & Britton, D. (2013). Management of speech and swallowing disorders in degenerative diseases (3rd Ed.). Texas: Pro-ed. An International publisher.
- Rosenbek, J.C., & Jones, N. H. (2009). Dysphagia in movement disorders. San Diego: Plural publishing.

Unit 5:

- Beukelman, Yorkston& Dowden (1994). Communication augmentation: A casebook of clinical management. San Diego: College Hill Press.
- Blackstone &Bruskin (1986). Augmentative communication: An introduction. ASHA Publication.
- Enderby, P (Ed) Assistive communication aids for the speech impaired. New York: Churchill Livgingston Inc.
- Glenen&Decoste, D.C (1997). Handbook of augmentative and alternative communicat-ion. London: Singular Publishing Group Inc
- Musselwhite& Louis (1988). Communicative programming for persons with severe handicaps: Vocal& augmentative strategies. Texas: Pro.ed.

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- Silverman, F.H (1980). Communication for the speechless. London: Prentice Hall.
- Vander Heiden, G & Grilley, K (Ed) (1978). Non-vocal communication techniques and aids for the severely physically handicapped. New York: University Park Press.
- Webster (Ed) (1990). Electronic devices for the communication handicapped. San Diego: College Hill Press.
- Yorkston, M.K., Beukelman, R.D., Strand, E. A., & Hakel, M. (2010). Management of motor speech disorders in children and adults (3rd Ed.). Texas: Pro-ed. An International Publisher.
- Weismer, G. (2007). Motor speech disorders. California: Plural publishing.
- Wertz, Lapointe & Rosenbek (1988). Apraxia of speech in adults. New York: Springer Verlag.
- Corbin-Lewis, k., Liss, M.J. (2015). Clinical anatomy and physiology of the swallow mechanism. (3rd Ed). Stamford: Cengage learning.
- Steeffel, J.S. (1981). Dysphagia rehabilitation for neurologically impaired adults. Illinois: Charles C Thomas publishers.
- Logemann, J. A. (1998). Evaluation and treatment of swallowing disorders (2nd Ed.). Texas: Pro-ed. An international publisher.
- Yorkston, M.K., miller, M.R., Strand, A.E., & Britton, D. (2013). Management of speech and swallowing disorders in degenerative diseases (3rd Ed.). Texas: Pro-ed. An International publisher.
- Rosenbek, J.C., & Jones, N. H. (2009). Dysphagia in movement disorders. San Diego: Plural publishing.

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PAPER: APHASIA AND OTHER LANGUAGE DISORDERS

Objectives:

At the end of the semester the students should be able to

1. Understand neurosciences of aphasiology.
2. Understand the traditional and recent approaches to aphasiology.
3. Understand the characteristics of different varieties of adult language disorders.
4. Diagnose and assess different intra and inter group varieties of adult language disorders.
5. Understand various therapeutic approaches involved for aphasia and other adult language disorders.

Unit 1: Neurosciences of adult language disorders – 10 Hrs

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

Unit 2: Aphasiology - 10 Hrs

- 2.1 Historical aspects of aphasia
- 2.2 Definitions, causes, classifications (cortical and subcortical aphasias), approaches to classification systems, types of aphasia- speech, language, behavioral and cognitive characteristics of varieties of aphasia

Unit 3: Non-aphasic language disorders/ Cognitive communication disorders in adults - 10 Hrs

- 3.1 A brief overview of Speech, language characteristics in
 - TBI (Traumatic Brain Injury)
 - RHD (Right Hemisphere Damage)
 - Dementia
 - PPA (Primary Progressive Aphasia)
 - Schizophrenia
 - Metabolic disorders
 - Alcohol induced disorders

Unit 4: Assessment of aphasia and other cognitive communication disorders -12 Hrs

- 4.1 Assessment of cognitive-linguistic behavior of adults with aphasia – Screening, Diagnostic and performance assessment tools (Scoring, interpretation and rationale) –BST, WAB, RTT, BAT, LPT, CLAP, CLQT
- 4.2 Assessment of speech, language, linguistic and cognitive behavior of adults with Non-aphasic language disorders/ Cognitive communication disorders – MMSE, ABCD, CLAP, CLQT
- 4.3 Reflections on approaches to assessment in bi/multilingual situation
- 4.4 Theories of spontaneous recovery and prognostic indicators of aphasia and other cognitive-communication disorders

Unit 5: Intervention strategies for aphasia and cognitive-communication disorders -12 Hrs

- 5.1 Principles of language intervention
- 5.2 Speech-Language Management Approaches- Deblocking, VCIU, LOT, MAAT, PACE, Stimulation Facilitation Approach, RET, VAT, Semantic Feature Analysis, TAP, TUF
- 5.3 Team approach in rehabilitation of adult language disorders
- 5.4 Counseling and home management for aphasia and other cognitive-communication disorders
- 5.5 Rights of persons with aphasia

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PRACTICUM

1. Record language samples of two individuals with Aphasia and other adult Cognitive Communication Disorders and transcribe them as per IPA transcription.
2. Administer, score and interpret the results of available tests for aphasia and other Cognitive Communication Disorders and related disorders
 - WAB
 - BAT
 - RTT
 - PICA
 - CLAP
 - DAB-K
3. Submit report (at least one) on assessment of a client with aphasia and other Cognitive Communication Disorders (Observed or evaluated).
4. Submission of report of counseling carried out for persons with aphasia and other Cognitive Communication Disorders or family members (at least one).

REFERENCE

Unit 1

- Arbib, M. A., Caplan, D & Marshall, J. C. (1982). Neural models of language processes. New York: Academic Press.
- Bhatnagar, S. C. (2008). Neuroscience for the study of communicative disorders. Baltimore: Lippincott Williams & Wilkins.
- Dworkin, J. & Hartman, D. E. (1994). Cases in neurogenic communicative disorders: A workbook. San Diego: Singular Publishing Group Inc.
- Kuehn, D. P., Lemme, M. L., & Baumgartner, J. M. (1989). Neural bases of speech, hearing and language. Boston: College Hill Press
- Manasco, M. H. (2014). Introduction to Neurogenic communication disorders Burlington: Jones and Barlett Learning.
- Maruszewski, M. (1975). Language, communication and the brain: A neuropsychological study. Paris: Mouton: The Hague.
- Murdoch, B. E. (2010). Acquired Speech and Language disorders- A neuroanatomical and functional neurological approach. UK: John Wiley and Sons.
- Petrides, M. (2014). Neuroanatomy of language regions of the human brain. UK: Elsevier.
- Rouse, M. H. (2016). Neuroanatomy for Speech Language Pathology & Audiology. Burlington: Jones & Bartlett Learning

Unit 2

- Caplan, D. (1987). Neurolinguistics and linguistic aphasiology: an introduction. Cambridge: Cambridge University Press.
- Davis, G. A. (2014). Aphasia and related cognitive communicative disorders. USA: Pearson Education Inc.
- Head, H. (2014). Aphasia and Kindred disorders of speech. Volume II. Cambridge: Cambridge University Press.
- Holmgren, E. & Rudkilde, E. S. (2013). Aphasia: classification, management practices and Prognosis. New York: Nova Sciences Publishing.
- Ibanescu, G. & Pescariu, S. (2009). Aphasia: symptoms, diagnosis and treatment. New York: Nova Science Publishers, Inc.
- Lecours, F., Lhermitte, F., & Bryans, B. (1983). Aphasiology. London: Tindall.
- Lesser, L. (1989). Linguistic investigations of aphasia. London: Cole & Whurr Ltd.
- Manasco, M. H. (2014). Introduction to Neurogenic communication disorders. Burlington: Jones and Barlett Learning.
- Murdoch, B. E. (2010). Acquired Speech and Language disorders- A neuroanatomical and functional neurological approach. UK: John Wiley and Sons.

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Unit 3

- Albert, M. L. (1981). Clinical aspects of dysphasia. New York: Springer-Verlag.
- Davis, A. (1983). A survey of adult aphasia. New Jersey: Prentice Hall.
- Davis, G. A. (2014). Aphasia and related cognitive communicative disorders. USA: Pearson Education Inc.
- Hegde, M. N. (1986). A course book on aphasia. San Diego: Singular Publishing Group Inc.
- Manasco, M. H. (2014). Introduction to Neurogenic communication disorders. Burlington: Jones and Barlett Learning.
- McDonald, S. Togher, L. & Code, C. (1999). Communication disorders following traumatic brain injury. UK: Psychology Press.
- Murdoch, B. E. (2010). Acquired Speech and Language disorders- A neuroanatomical and functional neurological approach. UK: John Wiley and Sons.
- Murray, L. L. & Clark, H. M. (2006). Neurogenic disorders of language. Delmar, USA: Cengage Learning.
- Rose, E. (1993). Aphasia. London: Whurr Publishers.

Unit 4

- Albert, M. L. & Obler, L. K. (1978). The bilingual brain-neuropsychological and neurolinguistic aspects of bilingualism: Perspectives in neurolinguistics and psycholinguistics series. New York: Academic Press.
- Burrus, A. E. & Willis, L. B. (2013). Professional communication in speech-language pathology: how to write, talk, and act like a clinician. San Diego. Plural Publishing Inc.
- Caplan, D. (1990). Neurolinguistics and linguistic aphasiology. London: Cambridge University Press.
- Davis, G. A. (2014). Aphasia and related cognitive communicative disorders. USA: Pearson Education Inc.
- Golper, L. A. & Frattali, C. M. (2013). Outcomes in speech-language pathology. USA: Thieme Medical Publishers.
- Hegde, M. N. & Freed, D. (2011). Assessment of Communication Disorders in Adults. San Diego: Plural Publishing.
- Ibanescu, G. & Pescariu, S. (2009). New York. Aphasia: symptoms, diagnosis and treatment. New York: Nova Science Publishers, Inc.
- Kertesz, A. (1979). Aphasia and associated disorders: Anatomy, localization and recovery. New York: Grune & Stratton.

Unit 5

- Coe, C. & Muller, D. (1989). Aphasia therapy: Studies in disorders of communication. London: Whurr Publications.
- Davis, G. A. (2014). Aphasia and related cognitive communicative disorders. USA: Pearson Education Inc.
- Golper, L. A. & Frattali, C. M. (2013). Outcomes in speech-language pathology. USA: Thieme Medical Publishers.
- Hegde, M. N. (2006). A Course Book on Aphasia and Other Neurogenic Language Disorders. San Diego: Singular Publishing Company.
- Holmgren, E. & Rudkilde, E. S. (2013). Aphasia: classification, management practices and Prognosis. New York: Nova Sciences Publishing.
- Ibanescu, G. & Pescariu, S. (2009). New York. Aphasia: symptoms, diagnosis and treatment. New York: Nova Science Publishers, Inc.
- LaPointe, L. (1990). Aphasia and related neurogenic language disorders: Current therapy of communication disorders Series editor Perkins. New York: Thieme Pub
- Mackie, N. S., King, J. M. & Beukelman, D. R. (2013). Supporting communication for adults with acute and chronic aphasia. Baltimore: Paul H Brookes Publishing.
- Martin, N., Thompson, C. K. & Worrall, L. (2008). Aphasia Rehabilitation- the impairment and its consequences. San Diego: Plural Publishing
- Roth, F. P. & Worthington, C. K. (2016). Treatment resource manual for speech language pathology. 5th Ed., Delmar, USA: Cengage Learning.

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PAPER: ENVIRONMENTAL AUDIOLOGY

Objectives:

After the completion of the course students should be able to:

- Explain the effects of noise on various systems in the body, with special reference to auditory system.
- Select appropriate test/s and assess the effects of occupational noise.
- Independently assess various kinds of noise in the environment and its possible effects.
- Identify people at-risk of developing occupational hearing loss and plan effective hearing conservation program.
- Assess eligibility for compensation in individuals with NIHL.

Unit 1: Overview, types and effects of environmental noise - 12 Hrs

1.1 Definition of noise, sources –community, industrial, music, traffic and others, types – steady and non-steady

1.2 Effects of noise:

Auditory effects of noise exposure: Historical aspects, TTS, factors affecting TTS, recovery patterns, PTS, Histopathological changes, Effect on communication, SIL, AI, Noy, PNdB, PNL, EPNL, NC curves, NRR, SNR. Effects on central auditory processing.

Non-auditory effects of noise exposure: Physiological/somatic including vestibular effects, Psychological responses, stress and health, sleep, audio-analgesia effects on CNS and other senses, effects on work efficiency and performance

Unit 2: Audiological evaluation of individuals exposed to occupational noise -12 Hrs

2.1 Case history

2.2 Audiometry in NIHL

Pure tone audiometry

- Hearing screening
- Baseline and periodic monitoring tests, brief tone audiometry, correction for presbycusis
- Testing environment
- Extended high frequency audiometry
- Speech audiometry
- Speech perception tests in quiet and in presence of noise

2.3 Other audiological evaluations: immittance evaluation, AEP, OAE, Tests for susceptibility

Unit 3: Noise and vibration measurements -10 Hrs

3.1 Instrumentation

3.2 Procedure for indoor and outdoor measurement of ambient noise, noise survey, traffic noise, aircraft noise, community noise and industrial noise

3.3 Factors affecting noise and vibration measurement

3.4 Reporting noise measurement including noise mapping

Unit 4: Hearing conservation -10 hrs

4.1. Need for hearing conservation program

4.2. Steps in hearing conservation program

4.3. Noise control: Engineering and administrative controls

4.4. Hearing protective device (HPDs)

- Types: ear plugs, ear muffs, helmets, special hearing protectors, merits and demerits of each type
- Properties of HPDs: attenuation, comfort, durability, stability, temperature, tolerance

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- Outcome measures and evaluation of attenuation characteristics of HPDs
- 4.5 Noise conditioning/Toughening

Unit 5: Legislations related to noise -10 hrs

- 5.1. DRC – definition, historical aspects, use of TTS and PTS, information in establishing DRC
- 5.2. CHABA, AFR 160-3, AAOO, damage risk contours, Walsh-Healey Act, OSHA, EPA, Indian noise standards for fire crackers
- 5.3. 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
- 5.4. Indian acts/regulations

PRACTICUM

Clinical Practicals:

- Measurement of ambient noise and practicing noise measurement with different settings on SLM
- Measurement of noise levels of toys/calibrated noise makers, diesel generator, traffic noise
- Knowledge on use & maintenance of HPDs
- Measurement of attenuation characteristics of HPDs
- Administration of audiological tests on industrial workers and appropriate counseling

REFERENCE

Unit 1:

- Behar, A., Chasin M. & Cheesman, N. (2000). *Noise control primer*. California: Singular Publishing Group.
- Burns, W. (1968). *Noise and man*. London: John Murray.
- Chasin, M. (1996). *Musicians and prevention of hearing loss*. San Diego: Singular Publishing Group Inc.
- Jones, D.N. & Chapman, A.J. (1984). *Noise and society*. London: John Wiley & Sons.
- Kryter, K.D. (1970). *The effects of noise on Man*. New York: Academic Press.
- Le prell, C.G., Henderson, D., Fay, R.R., & Popper, A.N. (2012). *Noise induced hearing loss*. London: Springer.
- Lipscomb D.M. (1978). *Noise and Audiology*. Baltimore: University Park Press.
- Lipscomb, D.M. & Taylor, A.C. (1978). *Noise control handbook of principles and practices*. New York: Litton Educational Publishing.
- Lipscomb, D.M. (1994). *Hearing conservation in industry, schools and the military*. California: Singular Publishing Group.
- May, D N. (1978). *Handbook of Noise assessment*. New york: Litton Educational Publishing.
- Salvi, R.J., Henderson, D., Hamrnik, R.P., & Colletti, V. (1986). *Basic and applied aspect of noise induced hearing loss*. New York: Plenum Press.
- Sataloff, R.T. (1987). *Occupational hearing loss*. Marcel Dekker, Inc.
- Tempest, W. (1985). *The noise handbook*. London: Academic Press.
- Trivedi, P.R. & Gurudeep R. (1992). *Noise Pollution*, 1st Ed. New Delhi: Akashdeep Publishing House.

Unit 2:

- Behar, A., Chasin M. & Cheesman, N. (2000). *Noise control primer*. California: Singular Publishing Group.
- Jones, D.N. & Chapman, A.J. (1984). *Noise and society*. London: John Wiley & Sons.
- Kryter, K.D. (1970). *The effects of noise on Man*. New York: Academic Press.
- Lipscomb, D.M. & Taylor, A.C. (1978). *Noise control handbook of principles and practices*. New York: Litton Educational Publishing.

B.ASLP ISS Scheme - 4 years programme

- Lipscomb, D.M. (1978). Noise and Audiology. Baltimore: University Park Press.
Lipscomb, D.M. (1994). Hearing conservation in industry, schools and the military. California: Singular Publishing Group.
Newby, H.A & Popelka, G.R. (1992). Audiology. 6th Ed. New York: Appleton-Century-Crofts.

Unit 3:

- Behar, A., Chasin M. & Cheesman, N. (2000). Noise control a primer. California: Singular Publishing Group.
Crocker, J.M. (2007). Handbook of Noise and Vibration Control. New York: John Wiley and Sons.
Jones, D.N. & Chapman, A.J. (1984). Noise and society. London: John Wiley & Sons.
Kryter, K.D. (1970). The effects of noise on Man. New York: Academic Press.
Lipscomb, D.M. & Taylor, A.C. (1978). Noise control handbook of principles and practices. New York: Litton Educational Publishing.
Lipscomb, D.M. (1994). Hearing conservation in industry, schools and the military. California: Singular Publishing group.
Tempest, W. (1985). The noise handbook. London: Academic Press.

Unit 4:

- Behar, A., Chasin M. & Cheesman, N. (2000) Noise control a primer. California: Singular publishing group.
Bies, D.A. & Hansen, C.H. (2009). Engineering noise control theory and practice. Ohio: CRC Press.
Boyster, U.D & Royster, L.H. (1990). Hearing conservation program: Practical guidelines for success. Michigan: Lewis Publishers.
Kryter, K.D. (1970). The effects of noise on Man. New York: Academic Press.
Le prell, C.G., Henderson, D., Fay, R.R., & Popper, A.N. (2012). Noise induced hearing loss. London: Springer.
Lipscomb, D.M. & Taylor, A.C. (1978). Noise control handbook of principles and practices. New York: Litton Educational Publishing.
Lipscomb, D.M. (1994). Hearing conservation in industry, schools and the military. California: Singular Publishing Group.
Sataloff, R.T. (1987). Occupational hearing loss. Marcel Dekker, Inc.

Unit 5:

- Jones, D.N. & Chapman, A.J. (1984). Noise and society. London: John Wiley & Sons.
Lipscomb D.M. (1978). Noise and Audiology. Baltimore: University Park Press.
Lipscomb, D.M. & Taylor, A.C. (1978). Noise control handbook of principles and practices. New York: Litton Educational Publishing.
Lipscomb, D.M. (1994). Hearing conservation in industry, schools and the military. California: Singular Publishing Group.
Tempest, W. (1985). The noise handbook. London: Academic Press.
BIS Specifications:
- IS Specifications
- Noise measurements.
- IS: 7194-1973 Specification for assessment of noise exposure during work for hearing conservation purposes.
- IS: 9167-1979 Specification for ear protectors.
- IS: 6229-1980 Method for measurement of real-ear protection of hearing protectors any physical attenuation of earmuffs.
- IS: 9876-1981 Guide to the measurement of airborne acoustical noise and evaluation of its effects on man.
- IS: 7970-1981 Specification for sound level meters.
- IS: 9989-1981 Assessment of noise with respect to community response.
- IS: 10399-1982 Methods for measurement of noise emitted by stationary road vehicles.

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PAPER: REHABILITATIVE TECHNOLOGY FOR INDIVIDUALS WITH HEARING IMPAIRMENT

Objectives:

After completion of this course the students should be able to:

- Select hearing aids based on pre selection factors and appropriate tests
- Select different assistive listening devices.
- Take ear impression and prepare the ear mould.
- Decide candidacy and select appropriate implantable device
- Trouble shoot hearing aids and counsel.

Unit 1 Objective assessment for Hearing aid selection - 10 Hrs

- 1.1 Pre-selection factors
- 1.2 Prescriptive and comparative procedures
- 1.3 Functional gain and insertion gain methods
- 1.4 Use of impedance, OAEs and AEPs

Unit 2 Hearing device selection and Programming - 12 Hrs

- 2.1 Hearing aids for conductive hearing loss
- 2.2 Hearing aids for children
- 2.3 Hearing aids for elderly
- 2.4 Selection of non-linear programmable and digital hearing aids
- 2.5 Programming of all digital Hearing aid
- 2.6 Outcome measures of Hearing aid benefits
- 2.7 Assistive listening devices – types and selection

Unit 3 Implantable Devices - 12 Hrs

- 3.1 Implantable hearing aids
 - Middle Ear Implant
 - BAHA
- 3.2 Cochlear implants – components, terminology, candidacy, advantages and complications, Mapping and issues related to CI.
- 3.3 Overview of Brainstem, Midbrain and Cortical implants.

Unit 4 Mechano-acoustic couplers -10 Hrs

- 4.1 Types of ear moulds
- 4.2 Various procedures of making ear moulds
- 4.3 Various modifications of ear moulds and its effect on acoustic characteristics

Unit 5 Trouble shooting of Hearing aids - 10 Hrs

- 5.1 Care and Maintenance of ear molds
- 5.2 Care, maintenance and trouble shooting of hearing aids
- 5.3 Care and Maintenance of implantable hearing devices
- 5.4 Counseling

PRACTICUM

1. Learning to use different prescriptive procedures for hearing aids selection
2. To learn programming of hearing aids
3. Insertion gain measurements and RECD on 5 subjects with normal hearing
4. Selection of hearing instrument for clients with special amplification needs
5. Fitting of hearing aids using appropriate sound field procedure for non-verbal and verbal clients, including aided and unaided audiogram
6. Observation of insertion gain measurements on 10 clients
7. Observation of programming and fine tuning of hearing aid
8. Making ear impression

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9. Preparation of ear moulds
10. Observation of making ear mould modification
11. Observation of Programming/mapping of cochlear implants, neural Response telemetry
12. Testing for ALD benefit
13. Counselling regarding use of ALDs

REFERENCE

Common to all units:

- Katz, J (1978, 1985, 1994). Handbook of clinical audiology. 2nd, 3rd & 4th Ed. Baltimore: Williams & Wilkins.
- Valente, M., Dunn, H.H & Roeser, R.J (2000). Audiology: Treatment. NY: Thieme.

Unit 1

- Sandlin, R.E (1994). Understanding digital programmable hearing aids. Boston: Allyn & Bacon.
- Studebaker, G.A & Hochberg, I (1993). Acoustical factors affecting hearing aid performance II Edn. MA: Allyn & Bacon.
- Volanthen, A (1995). Hearing instrument for the hearing healthcare professional. NY: Thieme.
- Mueller, G.H. (2014). Modern Hearing aids (pre fitting testing and selection hearing aids). UK: Plural Publishing Inc.
- Taylor & Mueller (2011). Fitting and dispensing hearing aids. UK: Plural Publishing Inc.
- Mueller, H.G., Hawkins, D.G. & Northern, J.L (1992). Probe microphone measurements: Hearing aid selection and assessment. California: Singular Publishing Group Inc.
- Hodgson, W.R & Skinner, P.H (1977, 1981). Hearing aid assessment and use in audiological habilitation. Baltimore: Williams and Wilkins.
- Maurer, J.F & Rupp, R.R (1979). Hearing and aging: Tactics for intervention. NY: Grune & Stratton

Unit 2:

- Bess, F.H et al. (1981). Amplification in education. Washington: Alexander Graham Bell Association for the Deaf.
- Hull, R.H. (1982). Rehabilitative audiology. NY: Grune & Stratton.
- Mueller, H.G., Hawkins, D.B & Northern, J.L (1992). Probe microphone measurements: Hearing aid selection and assessment. California: Singular Publishing Group Inc.
- Sanders, D.A (1993). Management of the hearing handicapped: From infants to elderly. III Ed. Prentice Hall Inc
- Valente, M (1994). Strategies for selecting and verifying hearing and fittings. NY: Thieme.

Unit 3:

- Cooper, H (1991). Cochlear implants: A practical guide. London: Whurr Publishers
- Niparko, J.K., Kirk, K.I., Mellon, N.K., Robbins, A.M., Tucci, D.L. & Wilson, B.S (2000). Cochlear implants: Principles and practices. Philadelphia: Lippincott Williams & Wilkins.
- Owens, E. & Kessler, D.K (1989). Cochlear implants in young def children. Boston: College Hill Publication.
- Tyler, R.S (1995). Cochlear implants: Audiological foundations. New Delhi: AITBS Publishers
- Valente, M., Dunn, H.H & Roeser, R.J (2000). Audiology: Treatment. NY: Thieme
- Waltzman, S.B & Cohen, N.L (2000). Cochlear implants. NY: Thieme.
- Tyler, R.S (1995). Cochlear implants: Audiological foundations. New Delhi: AITBS
- Gauri Mankekar (2014). Implantable hearing devices other than cochlear implants. NY: Springer Publishers.
- Michael J. Ruckenstein (2012). Cochlear Implants and Other Implantable Hearing Devices

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Unit 4:

- Berlin, I.C (1996). Hair cells and hearing aids. California: Singular Publishing Group Inc.
- Taylor & Mueller (2011). Fitting and dispensing hearing aids. UK: Plural Publishing Inc.
- Valente, M., Dunn, H.H & Roeser, R.J (2000). Audiology: Treatment. NY: Thieme
- Pollack, M.C (1980). Amplification for the hearing impaired. NY: Grune & Stratton
- Studebaker, G.A & Hochberg, I (1993). Acoustical factors affecting hearing aid performance. II Ed. MA: Allyn & Bacon.
- Harvey Dillon (2012) Hearing Aids. NY: Thieme.

Unit 5:

- Armbruster, J.M & Miller, M.H (1981). How to get the most out of your hearing aid. Association for the Deaf. Baltimore: Williams & Wilkins.
- Bess, F.H. et al. (1981). Amplification in education. Washington: Alexander Graham Bell.
- Clark, J.G & Martin, F.N (1994). Effective counseling in audiology: Perspectives and practice.
- Gawinski, M.J (1991). Transducer damage: A practical guide to prevention. Hearing Journal, Grune & Stratton.
- Loavenbruck, A.M & Madell, I.R (1981). Hearing aid dispensing for audiologists.
- Maurer, J.F & Rupp, R.R (1979). Hearing and ageing: Tactics for intervention. NY.
- Pollack, M.C (1980). Amplification for the hearing impaired. NY: Grune & Stratton.

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PAPER: ORGANISATION AND ADMINISTRATION OF SPEECH AND HEARING CENTERS

Objectives:

After studying this paper at the end of the semester, the student should be able to understand the following

- Scope of Speech-Language Pathologist and Audiologist in the service delivery system
- Legislative support for rehabilitation
- Setting up of speech language and hearing centres
- Documentation of records and ethical issues
- Overview of Administrative procedures

Unit 1: Rehabilitation of the Speech-Language and Hearing persons with communication Disorders -12 hours

- 1.1 Need for rehabilitation and hearing conservation;
- 1.2 Function of speech and hearing centres in different set-ups
- 1.3 Private practice, evaluation based practice
- 1.4 Government organizations, NGOs
- 1.5 Role of itinerant speech therapist, anganwadis, resource teachers etc.
- 1.6 Community based rehabilitation
- 1.7 Integration of persons with disability into the community and ICF 2001

Unit 2 Public laws related to disability - 12 Hrs

- 2.1 Rehabilitation Council of India and Disability related acts in India
- 2.2 Disability related Acts pertaining to Education and welfare of persons with disability in International perspective-UNCRPD.
- 2.3 Consumer protection Act, noise pollution Act and other public laws
- 2.4 Welfare measures available for persons with speech language and hearing disability
- 2.5 Certification of persons with speech language and hearing disability

Unit 3: Organization of Speech-Language and Hearing centres -10 Hrs

- 3.1 Setting up a speech-language and hearing centre
- 3.2 Organization of space, time and personnel
- 3.3 Recruiting personnel – rules and salary

Unit 4 Administrative procedures for infrastructures in Speech-Language Hearing centres - 10 Hrs

- 4.1 Budgeting and, financial management
- 4.2 Documents and record keeping – different types
- 4.3 Purchase formalities
- 4.4 Leave rules and other benefits for professionals and personnel

Unit 5 : Public education and marketing services - 10 Hrs

- 5.1 Organizing camps, screening programs, seminars, workshops etc
- 5.2 Public education methods
- 5.3 Professional Marketing skills
- 5.4 Ethical standards
- 5.5 Role of professional bodies and institutions - ISHA, RCI

REFERENCES

Unit 1

- Baquer, A. & Sharma, A. (1997). Disability: Challenges Vs Responses. CAN publications.
- Kundu, C.L., Status of Disability in India, (2000 & 2003) Ed.
- Kundu, C.L., RCI Narsimhan, M.C. & Mukherjee, A.K. (1986). Disability a Continued Challenge: Delhi willey eastern.

B.ASLP ISS Scheme - 4 years programme

WHO (2001). International classification of Functioning, Disability and Health. Geneva: WHO Professional Issues in Speech-Language Pathology and Audiology - A Text book. (1994).

Lubinski R. and Frattali C. California: Singular Publishing Group Additional/ Optional Reading: Administration and Management of Programs for Young Children. (1995)
Shoemaker, C. J. New Jersey : Prentice Hall Inc. Management of Child Development Centres. (1993) Hildebrand, V. (3rd Ed.). MacMillan Publishing Company.

Unit 2

Lubinski R. and Frattali C. California: Singular Publishing Group Additional/Optional Reading: Administration and Management of Programs for Young Children. (1995)
Shoemaker, C. J. New Jersey : Prentice Hall Inc. Management of Child Development Centres. (1993) Hildebrand, V. (3rd Ed.). MacMillan Publishing Company

Unit 3

Taylor, W.W., Taylor, I.W. (1967) Services for Handicapped in India, New Venue Publishers, Newyork.
Shakespeare, T (2002) Disability Rights and Wrongs, Routledge Publishers.
Ratna (1993) Speech and Hearing in last 30 years, A publication by ISHA.
Status of Disability in India-2012, A Publication by Rehabilitation Council of India.
Brinda & Muthuswamy (2013) Swami's Handbook 2013 for Central Government staff

Unit 4

Chaturvedi, T.N (1978) Administration for the Disabled: Policy and Organisational Issues, A Publication
Nichols, P (2001) Disabled: An Illustrated manual of help and self help, Diamond Publishers, New Jersey.
Kepler (2009). Public Health and Education, Deixeme Publishers, Scotland.

Unit 5

Goldeson (2002) Disability Rehabilitation Handbook, Reigalle Publishers, Austin.