

SYLLABUS

ON

DIPLOMA IN BASIC DEVELOPMENT THERAPY (CERBRAL PALSY AND OTHER NEUROLOGICAL DISABILITIES)

**REHABILITATION COUNCIL OF INDIA
(Statutory Body under the Ministry of Social Justice and Empowerment)**

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COURSE REGULATIONS

1. OVERALL OBJECTIVES

To promote an understanding of the situation and needs of (i) disabled persons especially in rural and urban slum communities and (ii) disabled persons further marginalized by poverty.

To train the students to deal with persons with cerebral palsy and other neurological disabilities.

To develop an appreciation of the benefits of a cost effective holistic approach to rehabilitation.

To explore ways in which effective preventive advice can be offered to families, communities, and disabled persons to prevent and reduce the impact of disability.

To understand and develop skills for Community Based Rehabilitation, mainstreaming and related issues, and function as middle level rehabilitation professional.

To understand and practice the human values and ethics involved in doing development work effectively.

2. SPECIFIC OBJECTIVES

To learn anatomy, physiology, pathology and biomechanics so as to recognize normal and abnormal patterns of development as a basis for developmental therapy for disabled children and young adults.

To learn recognition of the major disabling conditions / situations responsible for learning difficulties leading to delayed physical and functional achievements and their prevention.

To acquire skills for clinical assessment, measurement and differential diagnosis.

To learn development theories and methodology required to understand and apply this knowledge for (a) planning practical therapeutic rehabilitation, and (b) programming (including task analysis / programmed instruction, post-operative management, etc.)

To appreciate the advantages and disadvantages of different learning environments (home based, community etc.)

To promote understanding of the psychological, social and political needs of disabled persons within the family and within society, in order to foster acceptance and integration.

To develop basic knowledge of physical functional abilities and training skills through study, observation and hands on experience under supervision.

To promote an understanding of community and family dynamics, the status of the disabled, the low status of the poor disabled, women disabled and powerlessness.

To provide an understanding of useful strategies in bringing about social change and empowerment.

To provide role models for active participation and development work in rural, urban areas and for social mobilization.

To implement the principles and develop the skills for community based rehabilitation.

To develop skills for participative development to include the disabled person, the family and the community in planning, decision making, implementation and evaluation.

To promote a better understanding of the need for and the value of working in a team both in the rural and urban situation.

To learn management skills like planning and impact evaluation (including understanding qualitative and quantitative aspects.)

3. ELIGIBILITY

10 + 2 or equivalent pass

4. AGE LIMIT FOR ADMISSION

A candidate should have completed the age of 20years at the time of admission.

5. MEDIUM OF INSTRUCTION

All the lectures and instructions will be given in English and the examination should be written in English only.

6. DURATION OF THE COURSE

One academic year with normal breaks. Students will be required to undertake 4 weeks of Internship.

7. EVALUATION AND ATTENDANCE*

Students will be continuously evaluated on:

Depth of understanding

Communication skills and rapport with children, parents and groups

Analytical thinking and reasoning skills

Attitudes, values in interpersonal relationships

Work with disadvantaged persons

Maturity in counseling

Presentation skills

Skill development

Application of knowledge in real life situations

Ability to work effectively in different urban and rural settings

* 80% attendance is compulsory in theory and practical, as well as fieldwork.

8. MARKS FOR QUALIFYING

A percentage of 40 and above in theory and 50 and above in practical activities will be considered as pass (Overall percentage of 50 will be considered pass).

A percentage of 60 and above will be considered as pass with First Division.

A percentage of 75 and above will be considered as pass with First Division with

distinction.

9. CARRYOVER OF SUBJECTS

Final examination for all theory papers will be held at the end of the year. Failed candidates will be allowed to appear in the exam in the subsequent two attempts. Number of attempts in a particular paper will be reflected in the mark sheet. Those who have passed in all theory papers, but failed up to 3 practical examinations will reappear for the same and must pass within two subsequent examinations. Those who fail in up to 3 theory papers, but pass in the practical examinations will reappear in the same in two subsequent examinations within a year. Those who fail in more than 3 theory papers will be considered as failed.

10. COMPULSORY PROJECT WORK

If for whatsoever reason the student cannot complete the assigned project, placement work and passes in theory and other practical examinations, a grace time of six months may be given in exceptional cases at the discretion of the teaching institution and certification will be given after satisfactory completion of the entire course.

Note: External examiners will be involved in theory and practical examination.

11. AWARD

The successful candidates will be awarded the Diploma in "Basic Developmental Therapy Course for Persons with Cerebral Palsy and Other Neurological Disabilities."

12. COURSE STRUCTURE

In all 15-20 trainees will be admitted to the course. The core staff will consist of three full-time staff.

Course Coordinator - 1

The course coordinator will have a Master's Degree with a minimum work experience of 5 years in the field of Rehabilitation.

Lecturer - 2

The lecturer will be graduate in Physiotherapy with a minimum work experience of 3 years in developmental therapy and exposure to CBR.

For observation and practical work two students will be assigned to one therapist.

13. FACULTY

The internal faculty consists of qualified CBR workers and senior CBR workers with a minimum of 2 years experience in participatory community development work and senior members of the Therapy Department for practical training of the students.

The external faculty consists of medical specialists, visiting lecturers in specialized subjects or in the field of rehabilitation.

14. COURSE FACILITIES

Space, Lecture and Practical Rooms

1. Lecture rooms - 2
2. A well equipped department of Physiotherapy
3. Institutional access to Classrooms, Centre for Special or Integrated Education.
4. The training institutions should be having its own service component at

institutional level, home based and CBR activities.

Community Level

1. Classrooms in rural project area
2. Access to Vocational Guidance training at the Community
3. Therapy rooms
4. Access to community based centres
5. Self help groups

Library

Library should be equipped with relevant books as per the syllabus and should include literature on Indian Community Development Subjects.

- Subscription to international journals
- Membership for external libraries (optional)

Training Aids:

- Ideally recommended teaching aids are
 - Skeleton, model of the brain, anatomical charts
 - Overhead projector
 - Slide projector
 - Simulation Glasses
 - Model doll
 - TVNCR
 - Tape-recorder
 - Therapy equipment
 - Assistive and orthotic devices
 - Postural aids
 - Communication aids

15. TRAINING METHODOLOGY

- Lectures and Demonstrations:

Although these will be a considerable part of the academic component, they will be informal and students will be encouraged to participate fully through questions and discussions. During lectures there will be sharing of case studies and practical demonstration on cases.

- Learning through Discovery

Through interactions with and observation of children and persons with and without disabilities, the students will discover facts about them, some developmental norms and problems of disabled children and management of the children prior to receiving formal training.

- **Simulation**

In order to understand the impact of disability on the lives of the disabled persons, simulation techniques will form an important part of the training. For example simulation of spasticity, abnormal patterns of movement will be achieved using heavy duty elastic and simulation of visual disability using adapted glasses.

- **Role Play**

Students will engage in role-play to sensitize themselves to situations and to develop effective communication skills.

- **Tutorials**

These will be held as and when required on individual or group basis.

- **Peer Group Learning**

Through presentations, discussions and group work students will learn from each other.

- **Formal observation and practical handling**

There will be a strong emphasis on practical learning in the course. Students will be required to observe individual and group sessions conducted by trained personnel with the aim of developing various skills like assessment, physical and functional abilities training, counseling etc.

Overnight campus with the disabled will be organized for students to obtain first hand experience of helping them in their daily routine which will give them an insight into the realities and the difficulties which parents and the disabled face daily.

- **Project Placement**

Students will be placed under the supervision of therapist in all SPASTN's service projects (with importance being given to the rural CBR and home management projects), urban community based centres and in integrated settings. Project placements will include exposure to vocational training and job development, formal, functional special education, therapy and communication programmes, family oriented training and community based outreach programmes. They will gain hands on experience with disabled persons to learn assessment and physical and functional training.

- **Study Tours**

Study tours are regularly organized for students to good CBR and community development projects in different regions of India to provide exposure to several models of community based development and rehabilitation work.

- **Panel Discussions**

These will be organized to enabled students to have interactive discussions on identified issues related to disability with the panelists who would represent a wide spectrum of experience.

BASIC DEVELOPMENTAL THERAPY FOR PERSONS WITH CEREBRAL PALSY AND OTHER NEUROLOGICAL DISABILITIES

PAPER -1

(100 Marks)

Part-A Basic Applied Sciences (50 Marks)

- General introduction to various systems of body and their basic functions.
- Terminology, movements, planes and relationships of body parts
- Gross structure and function of the central nervous system
- Structure and function of muscle tissues
- Classification of joints and their structure
- Origin, insertion and action of major functional muscle groups
- Surface anatomy
- Analysis of stabilizing factor and movements of the spine and other joints
- Pelvic movements
- Identification of bones, joints and main muscle groups on dissected anatomical specimens
- Dermatomes of the body
- How muscles work
- Reciprocal innervation and the group action of muscles
- Normal posture
- Gravity and the body
- The neural control of posture, balance and muscle tones
- Motor learning and feedback mechanisms
- The respiratory system
- The circulatory system
- The effects of exercise on the heart and lungs
- The structure and function of the eye
- The anatomy and physiology of the speech mechanism
- The structure and function of the ear.

Part-B Child Development (50 Marks)

- Factors affecting development and variations in rural and urban areas in India.
- Gross Motor Development
 - Principles of development; Milestones;
 - Primitive reflexes and automatic reactions; righting and equilibrium reflexes. Development of mature reflexes and voluntary control.

- Fine Motor Development
 - Principles of development; Milestones
 - Types of grasp
 - Importance of trunk and head control in fine motor development
 - The development of drawing and writing
- Developmental milestones of daily living skills
 - Bladder and bowel control
 - Pre-feeding and feeding
 - Dressing
 - Bathing
 - Grooming
- Cognitive Development
 - Milestones: Theories of development
- Perceptual Development
 - Body image, spatial relation - form perception, figure ground, perception, motor basis of learning
 - Importance of inter-sensory integration
 - Perceptual process
- Generalization
- Speech, Language & Communication
 - Development and Relationship to vegetative functions
 - Language mediation for motor development
- Social and Emotional Development
 - Infancy, childhood and adolescence
- Development of play in 0-6 years
 - Types of play and its importance
- Visual Development
 - Types of movements, tracking, accommodation and convergence, acuity, Milestones.
- Development of hearing

**PAPER-II : BIO, PSYCHO-SOCIAL ASPECTS OF CEREBRAL PALSY
AND OTHER NEUROLOGICAL DISABILITIES**

(100 Marks)

- The response of nerve and muscle tissue to damage
- Mechanisms of adaptation after central nervous system damage
- Tonic reflexes
- Abnormal muscle tone
- Types and causes of deformities
- Cerebral Palsy
 - Aetiology and classification
 - Motor development in cerebral palsy
 - Retained primitive responses
 - Abnormal patterns of movements
 - Associated problems:
 - Speech dysarthria, dyspraxia, speech delay
 - Abnormal oral reflexes
 - Causes and types of hearing loss
 - Visual impairment and its effect on gross motor development .
 - Epilepsy - aetiology and types
- Mental Retardation
 - Functional recognition
 - Motor characteristics
 - Learning difficulties
 - Aetiology of syndromes and deteriorating conditions associated with mental retardation
- Muscular Dystrophy
 - Duchenne Muscular Dystrophy
 - Allied conditions - spinal muscular atrophy
- Neural Tube Defects
 - Aetiology and classification
- Polio - Aetiology and stages of recovery
- Commons orthopaedic conditions e.g. Rickets, Arthritis, Arthogryphosis, nerve injuries
 - causes and recognition
- Psychiatric disorders in adults and children - general introduction and guidelines for screening and referral
- Deteriorating conditions and congenital syndromes e.g. Ataxia Telangiectasia, Tuberous

sclerosis

- Malnutrition - recognition of symptoms and basic management ADHD
- Learning disabilities - causes and types
- Autism-recognition and referral

Disability and Related Issues

- Attitudes to Disability - misconceptions, beliefs, exclusion
- Situation /needs of persons with disability-poverty issues, rural/urban slums.
- Political/economic/social status of disabled persons (macro issues) - empowerment in Indian and Global contexts
- Participatory Development
- The disabled person, family dynamics and the community
- Integration in educational, work and social settings
- Access - services, special schemes, public facilities, concessions, etc.
- Legislation and disability
- Concepts of health and its social determinants
- Disability types and causes
- Identification of disabilities - early signs, screening tests
- Preventing disabilities - primary health care, first aid, and safety, preventing secondary disabilities.

PAPER-III:

CLINICAL, PHYSICAL AND FUNCTIONAL ASSESSMENT IN CBR CONTEXT

(100 Marks)

Physical and Functional Abilities Assessment

- Information gathering - surveys, reports writing, community resources, observation techniques
- History taking
- Differential diagnosis
- Purpose and aims of Assessment
 - Use of assessment performance and developmental checklists
- Developmental assessment
 - Screening tests for urban and rural areas
 - Play based assessment
 - Functional vision testing
 - Functional hearing testing
 - Outline of intellectual testing

- Assessment of
 - Tone and posture
 - Muscle tightness
 - Gait (normal gait and gait analysis)
 - Pathological gaits
 - Spine, hip, knees, foot and hand
- Sensory Assessment
- Clinical Measurement
 - Manual muscle testing
 - Goniometry
 - Leg length and spinal curvature measurements
- Task Analysis
- Comprehensive analysis of problems and potential

Principles Theoretical Basis and Assessment for:

- Orthotics (including measurement)
- Neuro-developmental techniques
 - Including application, use of equipment, modification and critique
- Conductive Education
 - Including adapted application in school and home setting; use of equipment
- Stretching Techniques
 - Passive movements: Myofascial release, serial plastering
- Sensory integration
- Exercise therapy
 - Rationale, types of exercises, selection and application
- Postural management
 - Biomechanics of postural care
 - Corrective positioning in daily life
 - Seating theory and design. Measurement for seating aids. Measurement of positioning aids
 - The value of standing
- Assistive Devices
 - Including types, selection, measurement, training and follow up
- Lifting and transfer techniques

PAPER-IV:

**PHYSICAL AND FUNCTIONAL ABILITIES TRAINING
IN CBR CONTEXT -I**

(100 Marks)

- Philosophy of management and treatment
- Goal setting
- Devising individual programmed plans and evaluating progress
- Referral and co-ordination with other agencies
- Therapy in daily routine - Neuro development therapy, Sensory Integration and Exercise Therapy approaches
- Early stimulation/play
- Management of deformities and contractures
- Postural Care
 - Selection and use of postural aids
- Orthotics
 - Selection and use of upper, lower and spinal orthoses
- Surgery
 - Surgical procedures in cerebral palsy and polio and other pediatric conditions e.g. club foot, idiopathic progressive scoliosis etc.
 - Pre and post operative management and family counseling
- Mobility
 - Home; community; public transport
 - Mobility aids and wheelchair skills
 - Gait training
- Self care and independence training – home; school; work place; community
 - Task analysis in self care activities
 - Techniques to advance independence
 - Inhibition of abnormal oral reflexes, postures for feeding and feeding aids
 - Toilet training, aids and selection for young children
 - Training in dressing, adapted clothing and dressing aids
 - Bathing, hygiene management and aids
- Chest Care
 - Postural drainage - techniques and indications for use
- Management of Sensation Problems
- Play and Leisure
 - Communication through play and leisure activities

- The use of leisure time
- Adapted toys and aids for leisure time activities
- Gross Motor Activities
 - Planning and running groups, Drama and Movement, Educational Rhythmic, Circuit Training
 - Team games

PAPER-V:

**PHYSICAL AND FUNCTIONAL ABILITIES
TRAINING IN CBR CONTEXT -II**

(Marks 100)

- Introduction to models of service delivery
- CBR concepts and approach
- Monitoring needs - reviews, discharges, participative evaluation
- Working with families in the community
 - Understanding parents perspectives
 - Assessment of needs and resources of parents
 - The problem solving process
 - Techniques of working with families (Training, counselling etc.)
 - Developing communication skills
 - Parent training workshops
- Vocational rehabilitation of disabled adults
 - Scenario
 - Problems and opportunities
 - Principles and guidelines of vocational rehabilitation
 - Vocational training principles
 - Training
 - Models of employment
 - Facilities/Concessions/Reservation of jobs for the disabled in India
- Special needs of disabled young adults
- Behaviour Modification
 - Identification and basic remediation
- Remediation of perceptual problems
- ADHD – Remediation

- Problems and management of hand function in cerebral palsy and other neurological disabilities
 - Pre-writing techniques and use of writing aids
- Speech, Hearing and Communication
 - Principles of speech therapy
 - Implications for the therapist when training the child with speech and learning impairment
 - Use of hearing aids
 - Augmentative communication
- Management of Visual problems
 - Movement and mobility training for the visually disabled
 - Visual stimulation for young children
 - Increasing awareness of and use of hands.
 - Implications for the therapist when training a child with visual impairment
- Management in Cerebral Palsy
 - Management of physical and functional problems
 - Drug management in Cerebral Palsy-basic information and referral
 - First aid and drug management in epilepsy
 - Basic information and referral
- Management of profoundly disabled
- Management in Polio
 - Prevention and rehabilitation for acute, sub-acute and post-paralytic stages
- Mental Retardation
 - Management of physical and functional problems
 - The use of behavioural techniques (introduction)
- Muscular Dystrophy and Neural Tube Defects
 - Management of physical and functional problems