Universitat Autònoma de Barcelona

2022/2023

Psychomotor Development of Children and Paediatric Physiopathology

Code: 102977
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OT	3	2

Contact

Name: Federica Guarino
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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Rebeca García González
Enrique del Campo García Ramos

Prerequisites

There are no prerequisites for enrollment.

It is desirable that the student has achieved the basic knowledge and skills of the subjects:

"Clinical evaluation in Physiotherapy of the Locomotive Apparatus", "Instrumental Evaluation in Physiotherapy of the Apparatus

Locomotive "," Physiotherapy in Neurology I "and" Human Psychology ".

It is recommended to carefully read the teaching guide before enrolling in the subject. It is emphasized that attendance at a minimum of 50% of the theoretical classes and seminars is a requirement to pass the subject through the continuous assessment.

Objectives and Contextualisation

The subject aims to offer the physical therapist a general vision of the peculiarities of the child versus adult, basic theoretical knowledge about normal and pathological child development and the tools to carry out its clinical evaluation. The student will become familiar with the evaluation of child development in its different areas, which will be the key tool for a correct approach to the different situations that can be found in the pediatric clinical practice, and the starting point for defining the therapeutics objectives and develop the physiotherapy treatment plan. Through a journey through pediatric pathology which most often may require the action and follow-up by the physiotherapist, will be special emphasis on the role of this within the multidisciplinary team of care for children and their families. We will focus on some issues, such as follow-up of children with some neurological risk factor (prematurity, neonatal asphyxia, others situations), multidisciplinary treatment of cerebral palsy, respiratory pathology in paediatrics and neuromuscular diseases. These issues will provide us a model and an example to apply to different clinical situations the theoretical knowledge and basic

concepts presented throughout the course, providing the student with clinical tools to work with children of different ages and exercising the search for individualized strategies to achieve the goals of treatment.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Apply quality-assurance mechanisms in physiotherapy practice, in accordance with the recognised and validated criteria.
- Constantly renew one's professional knowledge, competences and skills.
- Design the physiotherapy intervention plan in accordance with the criteria of appropriateness, validity and efficiency.
- Display a strategic and flexible attitude to learning.
- Display interpersonal skills.
- Display knowledge of the physiotherapy methods, procedures and interventions in clinical therapeutics.
- Evaluate the functional state of the patient, considering the physical, psychological and social aspects.
- Integrate, through clinical experience, the ethical and professional values, knowledge, skills and attitudes of physiotherapy, in order to resolve specific clinical cases in the hospital and non-hospital environments, and primary and community care.
- Participate in drawing up physiotherapy protocols on the basis of scientific evidence, and promote professional activities that facilitate physiotherapy research.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Work in teams.

Learning Outcomes

1. Apply physiotherapy methods, procedures and interventions to conditions in gynaecology, obstetrics and paediatrics.
2. Apply the evaluation procedures required in physiotherapy to paediatrics, in order to determine the degree of damage and its possible functional repercussions.
3. Describe and analyse evidence-based physiotherapy protocols for gynaecological, obstetric and paediatric conditions.
4. Describe and analyse the quality-assurance mechanisms of physiotherapy in gynaecology, obstetrics and paediatrics.
5. Describe the injuries and diseases in obstetrics, gynaecology and paediatrics, identifying the symptoms that appear during the process, their etiology and the associated medical, surgical and rehabilitation treatments.
6. Describe the physiotherapy techniques in therapy for gynaecological, obstetric and paediatric conditions and display up-to-date knowledge of their effectiveness.
7. Describe the principles behind evaluation in paediatrics.
8. Design therapeutic exercises and activities for obstetric, gynaecological and paediatric diseases and injuries.
9. Display a strategic and flexible attitude to learning.
10. Display interpersonal skills.
11. Explain the explicit or implicit code of practice of one's own area of knowledge.
12. Identify the principal forms of sex- or gender-based inequality present in society.
13. Identify the social, economic and environmental implications of academic and professional activities within one?s own area of knowledge.
14. Use physiotherapy to treat clinical cases involving gynaecological, obstetric and paediatric conditions.
15. Work in teams.

Content

The subject consists of 26 units:

Unit 1. Introduction to the subject.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. Terminology and basic concepts: child development, neurodevelopment.

b. Peculiarities of the child with respect to the adult.

c. Concept of cerebral plasticity and its clinical implications.

Unit 2. Physical examination of the healthy newborn.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. Cranial and facial morphology.

b. Attitude and activity.

c. Neonatal reflexes.

d. Axial tone: ventral and dorsal suspension and pull-to-sit.

e. Cervical region and upper limbs examination, tone and reflexes evaluation.

f. Lumbar region and lower limbs examination, Barlow and Ortolani maneuvers, tone and reflexes evaluation.

g. Warning signs that may indicate the presence of a pathology.

Unit 3. Physical examination of the infant and the child.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. General concepts (environment and material).

b. Aspects to take in mind for an adequate exploration (presence of parents, strategies to win the collaboration and avoid rejection of the child).

c. Neurological and locomotor examination: cranial nerves, tone, strength, reflexes, coordination, balance, gait.

d. Warning signs that may indicate the presence of a pathology.

Unit 4. Normal child development, its milestones and warning signs.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. Areas of child development.

b. Neurodevelopmental milestones in the different areas.

c. Detection of warning signs.

d. Assessment of neurodevelopment in children of different ages, aspects to take in mind, Llevant table.

Unit 5. Newborns at neurological risk.

Teacher: *FedericaGuarino (Federica.Guarino@uab.cat)*

a. Concept of neurological risk: most frequent clinical examples.

b. Biological andenvironmental risk factors.

c. Risk factors that act in the prenatal, perinatal or postnatal period.

Unit 6. Early attention program.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat) and Rebeca García González (rebeca.garcia.gonzalez@uab.cat)*

a. Concept of early attention.

b. Early attention centers in Catalonia.

c. Physiotherapist's role within the multidisciplinary early attention team.

Unit 7. Motor development alterations.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. Concepts (variant of normal, warning signs, delay, disorder)

b. Simple motor delay.

c. Motor development alterations caused by central nervous system pathology (cerebral palsy).

d. Motor development alterations due to spinal cord pathology.

e. Motor development alterations due to peripheral nervous system pathology.

f. Motor development alterations due to muscular pathology.

g. Motor development alterations due to osteoarticular pathology.

Unit 8. Physiotherapy approach to motor development alterations.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat) and Rebeca García González (rebeca.garcia.gonzalez@uab.cat)*

a. Anamnesis.

b. Assessment of development and description of possible difficulties:

I. What does the child do, what should he do for his age, how he does it?

II. Scoring and non-scoring items.

c. Formulation of a treatment proposal based on therapeutic objectives.

d. Materials and work settings.

e. Movement facilitation techniques that allow us to achieve different motor milestones: cephalic control, rolling, sitting, autonomous displacement,transfers,standing and gait.

Unit 9. Neonatal pathology.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat) and Rebeca García González (rebeca.garcia.gonzalez@uab.cat)*

a. Prematurity:

I. Epidemiology.

II. Causes.

III. Complications.

IV. Mortality and morbidity according to gestational age and birth weight.

V. Neurological follow-up and developmental evaluation of the child with a history of prematurity; concept of corrected age and its application.

VI. Physiotherapist's role in follow-up of the child with a history of prematurity: early detection and prevention, intervention strategies.

b. Encephalopathy due to hypoxia-ischemia:

I. Concept of perinatal asphyxia.

II. Concept of encephalopathy due to hypoxia-ischemia.

III. Prognostic factors: clinical and neuroimaging indicators.

IV. Therapeutic hypothermia: concept and indications.

V. Warning signs in follow up of a child with history of encephalopathy due to hypoxia-ischemia.

VI. Role of the physiotherapist in follow-up of the child with history of encephalopathy due to hypoxia-ischemia: early detection and prevention, intervention strategies.

c. Neonatal stroke:

I. Definition and type.

II. Risk factors.

III. Clinical presentation.

IV. Physiotherapist's role in early detection and follow up of the child with a history of neonatal stroke:warning signs, strategies of intervention.

d. Obstetric trauma:

I. Obstetric brachial paralysis.

II. Other traumatisms.

e. Other situations.

Unit 10. Pediatric respiratory development and physiology.

Teacher: *Enrique Del Campo García Ramos (Enrique.DelCampo@uab.cat)*

a. Respiratory system development: embryonic period, fetal period, postnatal period.

b. Anatomy and physiology of the respiratory system: differences between child and adult.

Unit11. Respiratory pathology in prematuritiy and neonatology.

Teacher: *Enrique Del Campo García Ramos (Enrique.DelCampo@uab.cat)*

Unit 12. Respiratory pathology in pediatrics.

Teacher: *Enrique Del Campo García Ramos (Enrique.DelCampo@uab.cat)*

a. Bronchiolitis.

b. Pneumonia.

c. Bronchospasm.

d. Bronchiectasis.

Respiratory pathology in pediatrics.e. Cystic fibrosis.

f. Alterations of the upper airway.

g. Pediatric diseases that most often associate respiratory problems.

Unit 13. Cerebral palsy.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat), Rebeca García González (rebeca.garcia.gonzalez@uab.cat) and Enrique Del Campo García Ramos (Enrique.DelCampo@uab.cat)*

a. Definition, concept and global vision.

b. Classifications of cerebral palsy:

I. According to the type of motor disorder.

II. According to the distribution.

III. According to the degree of functional affectation (Gross Motor Function Classification System).

c. Complications of cerebral palsy.

d. Treatment of cerebral palsy and its complications:

I. Concept of multidisciplinary approach and global attention.

II. Technical and orthopedic devices.

III. Pharmacological treatment (botulinum toxin and other drugs).

IV. Controversy on methods of physiotherapy treatment.

V. Respiratory disorders in cerebral palsy.

VI. Assessment of pharyngeal dysphagia and esophageal gastric reflux.

Unit 14. Cranial deformities and cranial growth disorders.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat) and Rebeca García González (rebeca.garcia.gonzalez@uab.cat)*

a. Cranial deformities:

I. Positional plagiocephaly: concept, assessment, postural treatment, criteria for referraltoneurosurgery.

II.Cranioestenosis: concept and type, decision-making .

b. Hydrocephaly: concept and causes.

c. Alterations of the cranial perimeter or its growth:

I. Assessment of the cranial perimeter and its growth.

II. Macrocephaly: definition, causes, warning signs.

III. Microcephaly: definition, causes, warning signs.

Unit 15. Basic concepts of diagnostic examinations in pediatric neurology.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. Neuroimaging techniques and their main indications.

b. Other diagnostic examinations and their indications.

Unit 16. Neurodevelopmental disorders.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. Intellectual disability and global developmental delay.

b. Autism spectrum disorder.

c. Communication disorder.

d. Specific learning disorder.

e. Attention déficit hyperactivity disorder.

f. Motor disorders (coordination developmental disorder, Stereotypic *Movement Disorder*, tic disorder)

g. Others neurodevelopmental disorders.

Unit 17. Genetics: knowledges that can be useful for the physiotherapist.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

a. Basic concepts in genetics.

b. More frequent pathology and syndromes.

c. Peculiarities and assessment of psychomotor development in children with genetic syndromes (Down syndrome, Prader-Willi syndrome, others).

Unit 18. Epileptic and non-epileptic paroxysms: clinical signs the physiotherapist should detect and handle in the acute phase.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

Unit 19. Hypotonic newborn and infant.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat) and Rebeca García González (rebeca.garcia.gonzalez@uab.cat)*

a. Concept ofneonatal hypotonia.

b. Central, peripheral and mixed causes.

c. Clinical examples.

d. Physiotherapist's role in therapeutic approach of newborns or infants with hypotonia: aspects to take in mind.

Unit 20. Neuromuscular pathology: clinical overview.

Teachers: *Laura Carrera García*, *Enrique Del Campo García Ramos (Enrique.DelCampo@uab.cat) and Federica Guarino* (Federica.Guarino@uab.cat)

a. Duchenne Muscular Dystrophy.

b. Spinal Muscular Atrophy.

c. Other situations.

d. Physiotherapist's role in therapeutic approach of the child or adolescent with neuromuscular pathology: aspects to take in mind.

e. Respiratory problems in neuromuscular diseases.

Unit 21. Techniques of respiratory physiotherapy and devices adapted to paediatrics.

Teacher: *Enrique del Campo García-Ramos (Enrique.DelCampo@uab.cat)*

Unit 22. Overview of orthopedic and traumatological pathology common in pediatrics.

Teachers: Paula Díaz Gallardo *and Federica Guarino (Federica.Guarino@uab.cat)*

a. Rotational alterations lower extremities.

b. Genu valgum and genu varum.

c. Scoliosis.

d. Fractures.

Unit 23. Most frequent hip disorders in childhood.

Teachers: Paula Díaz Gallardo *and Federica Guarino (Federica.Guarino@uab.cat)*

a. Clinical orientation of lameness in the child.

b. Congenital pelvic obliquity.

c. Legg-Calvé-Perthes disease.

d. Hip epiphysiolysis.

e. Congenital hip dysplasia.

Unit 24. Spina bifida (myelodysplasia): treatment of physiotherapy, technical and orthopedics devices.

Teacher: *Federica Guarino (Federica.Guarino@uab.cat)*

Unit 25. Concept of global care: patient, family, environment.

Teachers: *FedericaGuarino (Federica.Guarino@uab.cat), Rebeca García González (rebeca.garcia.gonzalez@uab.cat) and Daniel Bernardo Graset.*

a. From disease centered model to patient centered model: a change of perspective.

b. Beyond technical and scientific knowledge: importance of communication and emotions in therapeutic relationship.

c. Bidirectionality of professional relationship

d. Shared-decision-making in clinical practice.

e. Adolescence in patients with chronic neurological or respiratory illness.

f. Aspects of the transition to adulthood care.

Unit 26. "Hands-Off" and at a distance physiotherapy: wath we have learned during COVID-19 pandemic.

Teacher: *Rebeca García González (*rebeca.garcia.gonzalez@uab.cat)

a. Tools and strategies for the evaluation and intervention of pediatric physiotherapy at a distance.
b. Pros and cons of at a distance intervention.
c. Others reflections.

Methodology

Teaching is based on theoretical classes and seminars.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
CLINICAL CASE SEMINARS (SCC)	8	0.32	14, 1, 2, 6, 4, 3, 7, 5, 8, 11, 13, 12, 10, 15
LABORATORY PRACTICES (PLAB)	10	0.4	14, 1, 2, 6, 4, 3, 7, 5, 8, 10
THEORY (TE)	35	1.4	1, 2, 7, 5, 11, 13, 12
Type: Supervised			
Presentation and oral presentation of works	5	0.2	14, 6, 4, 3, 7, 5, 8, 10, 9, 15
Type: Autonomous			
PERSONAL STUDY	53	2.12	14, 1, 2, 7, 5, 9
READING OF ARTICLES / REPORTS OF INTEREST	18	0.72	14, 1, 2, 5, 9
WORKING PROCESS	15	0.6	6, 3, 8, 10, 9, 15

Assessment

Minimum grade to pass: 5

Attendance at a minimum of 50% of theoretical classes and seminars is a requirement to pass the course subject means of continuous evaluation.

Continuing assessment activities:

Written evaluation through objective tests of selection of alternate response items and / or election items multiple and wide-test questions. Partial exams (overall, 50% final grade):

- Partial exam 1 (25% final note): eliminatory character, relative to the first part of the program; multi answer test with 25 questions and 4 answer options for each question. Each question answered correctly is will value with 1 point. The questions answered erroneously will fall to 0.25 points. The questions are not answers do not subtract points.

- Partial exam 2 (25% final note): eliminatory character, relative to the second part of the program; multi answer test with 25 questions and 4 answer options for each question. Each question answered correctly is will value with 1 point. The questions answered erroneously will fall to 0.25 points. The questions are not answers do not subtract points.

Attendance and active participation in class and seminars (overall, 15% final grade):

- Proven attendance at classes and seminars that are greater than or equal to 80%: the student that fulfills this criterion get 0,5 point / 10 in the final note (the attendance is 5%).

- Proven attendance in class and seminars greater than or equal to 50%, but less than 80%: the student who this criterion meets 0 points / 10 in the final grade regarding attendance, but it is considered evaluable as for the other activities (partial exams, works and other activities of continuous assessment).

Attendance at a minimum of 50% of theoretical classes and seminars is a requirement to pass the course subject means of continuous evaluation.

- Active participation in class and seminars (includes proactive attitude towards learning and willingness to take care of communication with the teaching staff): 10% of the final mark.

Practical type evaluation through structured objective evaluation and simulations. Other activities ofcontinuous assessment (overall, 20% final grade):

- Continuous assessment exercises associated with the practical classes, type assessment of a clinical history and near the relevant dates to perform the assessment of psychomotor development, elaboration of a plan of Physiotherapy treatment applied to clinical cases, practical evaluation of the student's knowledge about the facilitation statistics of the movement and techniques of respiratory physiotherapy in paediatrics. 20% final mark.

Oral defense of works: 15% final mark.

Conditions to pass the subject:

Each partial exam must be approved.

The evaluation of all the works and activities of continuous evaluation must be approved.

Minimum attendance of 50% for classes and seminars.

The student who in any of the parts can not demonstrate sufficient evidence of evaluation will be considered not evaluable.

Recovery tests:

- Evidence of recovery of the parts of the evaluation not passed during the continuous evaluation: The students who they have previously been evaluated in a set of continuous evaluation activities whose weight is equivalent at least two thirds of the total grade of the subject, but have not passed any of these parties, may be submitted to a recovery test relative only to the part of the evaluation that they have not passed previously. The characteristics of this recovery test will depend on the part of the evaluation to be recovered. In case of having to recover a partial exam, the recovery test It will consist of a multi answer test with 10 test type questions (4 answer options per question, each question answered correctly will be assessed with 1 point, the questions answered incorrectly there will be 0.25 points, the questions not answered will not subtract points), plus 3 open questions. The note of the proof of recovery of the partial exam will be the average note between the note of the multi answer test and the note of the open questions In case of having to recover the whole of the practical type evaluation, the test of recovery will consist of the evaluation of a clinical history and in the elaboration of a treatment plan physiotherapy applied to the clinical case, putting into practice the knowledge about the assessment of development psychomotor, movement facilitation strategies and respiratory physiotherapy techniques in paediatrics. In case of having to recover the oral preparation and defense of the work, the subject of the work will be agreed with the student of recovery, that will have to be given to the teaching staff for its correction, and subsequent publication in the Classroom Moodle to put the work available to the rest of

the class. The date of the recovery test (exam partial or practical type assessment), as well as the deadline for the delivery of the recovery work, will be agreed between the interested student and the teaching staff, and will not have to be after the date of the final test of recovery established according to the official calendar of the academic course. The minimum attendance requirement at 50% of classes theoretical and seminars are not susceptible to being recovered through this recovery test. Is not He plans to carry out any of these recovery tests in order to raise the note from a part of the assessment already passed.

- Final recovery test: From the 2nd enrollment, in the case of students who have not passed any or all of the parts of continuous assessment, and provided they have not previously been evaluated in a set of evaluation activities continued whose weight equals to a minimum of two thirds of the total rating of the subject will perform a final recovery test, which will score 100% of the final grade. The test will be relative to the whole agenda and to all the recommended bibliography and will consist of a multi answer test with 30 relative to thewhole agenda and to all the recommended bibliography and will consist of a multi answer test with 30 questions (4 answer options for each question; each question answered correctly will be valued with 1 point. The questions answered erroneously will fall to 0.25 points. Unsolved questions not subtract points),which will score 50% of the final mark, plus 4 open questions with answer to be prepared by part of the student, which will be evaluated by the teaching staff, by the remaining 50% of the final grade. If the student who has not passed any or all of the parts of the continuous assessment will not be presented with final proof of recovery, your final qualification to the subject will be an unvaluable one.

The review of the exams will be carried out, for the students who wish, on the date specified in the sheet examination call.

Regarding the students assigned to the Tutoresport program, the sports program should be provided at the beginning of the year at the teaching staff of the subject. If it suggests that the attendance requirement by 50% will not be achieved, or that the student will not be able to attend part or any of the practical evaluation activities, the teaching staff of the subject will assess, together with the student and their tutor, how the assessment will be carried out of the knowledge of the student about these parts of the subject (for example, individual exercises of reflection and search applied to clinical cases, individual extension of some parts of the syllabus and presentation of abstracts, elaboration of individual work and presentation to the rest of the class, etc.).

Typology	Duration time	Description of the evaluation test	Evaluation criteria	Minimum mark for approve	% of the final mark	Calendar
Written evaluation with objective tests of selection of items alternate answer and / or Choice items multiple and tests Wide test:	45 min for each test	Multianswer test	Each question answered correctly will be valued with 1 point. The wrong questions subtract 0.25. The unanswered questions they will not be subtracted.	5	50% (25+25)	February to June

- partial exams 1 and 2						
Practical evaluation through objective evaluation structured and simulations	Continuous	Exercises of continued evaluation associated to the classes practices	Objective structured practical evaluation.	5	20%	
Oral defense of works	Continuous	Elaboration, presentation and oral defense of work	Elabotion of the work, interest, team working skills and individual presentation	5	15% February to June	
Assistance and active participation in class and seminars	Continuous	Assistance and active participation	Assistance Active participation in class and seminars	Minimum 50%		
					5% February to June	
					10% February to June	
Recovery test partial exam	60 min	Multianswer + open questions test	Multi answer test with 10 testquestions (4 answer options for each question); Each correctly answered question will be valued as 1 point. The questions answered erroneously will subtract 0.25 points. Unanswered questions will not subtract points - plus 3 open questions. The mark of the partial exam recovery test will be the average grade between the multi-answer test score (50% final mark of the test)	5	25%	May/June

Recovery evaluation test practical type	60 min	Exercise of practice evaluation	Valuing a story clinic and in the preparation of a physiotherapy treatment plan applied to the case clinical, putting into practice knowledge about valuation of child development, strategies to facilitate the movement and techniques respiratory physiotherapy in pediatrics	5	20%	May/June
Recovery test elaboration and defense of work		Elaboration and defense of work	The student will be agreed upon subject of the work of recovery, what will it be to deliver to teachers for its correction, and later publication in the Moodle Classroom	5	15%	May/June
Final recovery test	90 min	Multianswer + open questions test	Multi answer test with 30 test type questions (4 answer options for each question). Each question answered correctly will be assessed with 1 point. The questions answered erroneously will be subtracted -0.25 points; the questions not answered, no subtract points. It will score 50% of the final mark of the test. 4 open questions:the answers elaborates by the student will be evaluated by the teachers and the global note of this part of the test will score 50% of the final mark of the test.	5	100%	June

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Attendance and active participation in class and seminars	15%	2.25	0.09	14, 1, 2, 6, 7, 5, 11, 13, 12, 10
Oral defense of work	15%	0.25	0.01	6, 5, 10, 9, 15

Practical type evaluation : structured objective evaluation and simulations	20%	2	0.08	14, 1, 2, 6, 4, 3, 7, 5, 8, 11, 13, 12, 10, 9, 15
Written evaluation : multiple choice items and essay tests broad questions	50% (25% + 25%)	1.5	0.06	14, 1, 2, 7, 5, 9

Bibliography

Students will have at their disposal in the Virtual Campus of the subject the main digital bibliographic resources (a

It is mencioned for its relevance as a basic digital reference:

1. https://neurologicexam.med.utah.edu/pediatric/html/home_exam.html

Basic textbooks:

2. Macias Merlo L, Faoaga Mata J. Fisioterapia en pediatría. 2ª Edición. Editorial Medica Panamericana. 2018.

Complementary textbooks:

3. Campistol J. Neurología para pediatras.Editorial Médica Panamericana; 2011.

4. Fejerman N, Fernández-Álvarez E. Neurología pediátrica. Editorial Médica Panamericana; 2007.

5. Postiaux G. Fisioterapia respiratoria en el niño. Mc Graw-Hill; 2000.

Software

No specific software required.