

**PEDI 6510 Weekend Intensive**

**Management of Pediatric Neurological Conditions WI**

**Weekend Intensive Syllabus/Justification Letter**

Type of Course (weekend intensive with online pre-course work)

June 22-23, 2019 8:00-5:00 each day

University of Alabama in Birmingham, School of Health Professions, Department of Physical Therapy, SHPB235-239, 1720 2nd Avenue South, Birmingham, AL 35294-1212

Host Contact: Sheree York 205-613-3964 (if needed close to weekend, for lost folks trying to get in the building, etc

**Course Author: Dr. Elisa Kennedy and Dr. Sheree York**

**Course Contact Info:** **ekennedy@southalabama.edu****,** **yorks@uab.edu**

All questions related to this course should be directed to courses@eimpt.com or you can call the office directly at 1-888-709-7096. To expedite a response to your request please include Course Name and Number, your question, the url to webpage related to the question, and a screenshot of what you see on your screen.

**Course Description:**

EIM's Management of Pediatric Neurological Conditions course is designed to enhance the participant's knowledge and skill level in the evidence-based management of pediatric patients with neurodevelopmental disabilities. This lab intensive course focuses on the clinical reasoning and applied skill development necessary to effectively integrate neurorehabilitation examination and intervention techniques into the clinical management for these children and their families. The course framework is reflective of the best available evidence in pediatric neurologic therapy as guided by the International Classification of Functioning, Disability, and Health (ICF) Framework and visionary recommendations arising from the IV Step Conference sponsored by the pediatric and neurologic academies of the American Physical Therapy (APTA 2016). The lab course covers assessment and intervention for infants at-risk for developmental delays and other specific pediatric neurologic medical diagnoses. Specific course highlights include: developmental intervention for infants, intensive therapy programs for children s/p dorsal rhizotomy (SDR) and/or single-event multilevel surgery (SEMLS), pediatric vestibular rehabilitation, sensorimotor rehabilitation (including vestibular rehabilitation, autism spectrum disorder, and developmental coordination disorder), constraint-induced therapy, and recommendations for special equipment. In addition, the participants will be able to actively engage and gain insight from experienced pediatric physical and occupational therapists and families who have children with neurodevelopmental disabilities.

**Approach/Instructional Method**:

This course is delivered in a blended learning fashion, combining online and on-site learning experiences to facilitate participant learning. An interactive and media-rich online precourse is provided to participants 30 days in advance of an intensive 2-day on-site laboratory weekend. The online precourse provides an evidence-based framework of best-practices in pediatric neurorehabilitation using a series of web-based video presentations, key evidence summaries and primary research articles. The on-site lab intensive weekend provides participants with hands-on demonstration and practice of selected examination and intervention techniques to equip therapists with the latest evidence-based therapy practices. Specific emphasis is placed on the understanding of the complete clinical and contextual profile of the child and their family – going beyond the traditional diagnostic or impairment-based model. The course will have a student to faculty ratio of no greater than 18:1 (16:1 in California). An online post-test and on-site skill assessment are used to reinforce course objectives and assess learning. Successful completion of this course requires 80% or higher on post-test, skills assessment and attendance at each onsite day.

**Objectives:**
**Upon completing this course, you'll be able to:**

1. Integrate knowledge of foundational sciences related to structure, normal neuromotor development and maturation, movement dysfunction, pathological processes associated with common pediatric neurologic conditions to enhance functional outcomes.
2. Implement a systematic examination by history and systems review, including appropriate selection and prioritization of tests and measures, to guide evaluation, diagnosis/evaluation, intervention, and referral as needed for pediatric patients with selected neuromuscular dysfunction.
3. Interpret examination data to link impairments, functional limitations, and psychosocial factors to the patient’s and family/caregiver’s expressed goals.
4. Interpret data from an examination to develop a differential diagnosis, to identify movement system impairments/functional limitations amenable to intervention or to determine need for additional services for pediatric patients with selected neuromuscular dysfunction
5. Develop appropriate plans of care to achieve optimal level of function for pediatric patients with selected neuromuscular dysfunction.
6. Select appropriate measures to determine global outcomes including effectiveness of intervention and impact on quality of life for pediatric patient with neuromuscular dysfunction.

**Target Audience:** Intermediate level course open to licensed occupational and physical therapists

**Contact/CEU Hours:** 24 contact hours (8 online and 16 on-site) from EIM Institute of Health Professions

**EIM Program Applicability:** None. This course must be taken in conjunction with an 8-week online management course to earn constructive credit towards EIM's Certificate in Pediatric Practice.

**Prerequisites:** None

**Appropriate dress**: Participants are asked to bring appropriate attire for lab sessions and mindful we will be working with families and their children. (i.e. shorts and t-shirts or workout clothes) in air-conditioned environments throughout the day.

**Course content:**

1. All online content will be delivered through Moodle, the online learning platform. You will receive your login information with your program/course registration.
2. The course syllabus contains everything you need including weekly instructions.
3. The recorded lectures are posted in Moodle
4. The required readings are also found in the corresponding Dropbox folder.

**Course materials:**

Readings/Articles

Required and supplementary articles are listed in each weekly module and can be downloaded for viewing and saving to your personal library from the Dropbox link available in the course in the EIM Moodle Learning Management System. Each week will have its own folder in Dropbox for the course.

Lectures/Presentations

Links to the video recorded PowerPoint lectures for each module are located in the corresponding module (you may need to open the dropdown) of the course in the EIM Moodle Learning Management System.

Links to the pdf of the lecture handouts for each module are listed in each weekly module and can be downloaded for viewing and saving to your personal library from the Dropbox link available in the course in the EIM Moodle Learning Management System. Each week will have its own folder in Dropbox for the course.

**Course Assignments/Course Schedule**

**Pre-Course (online) Materials & Time Requirements:**

The pre-course outline, educational content, and approximate student time requirements are provided below:

|  |
| --- |
| **Orientation and Framework**  |
| Online presentations | * Orientation: Management of Pediatric Neurologic Conditions Overview
* Pediatric Neurorehabilitation: State of the Art
* [ICF Educational e-Tool CP Core Sets](http://learn.phsa.ca/shhc/icf/story_html5.html)
 | 9:57 minutes11:58 minutes10:00 minutes |
| Required readings | * Chiarello (2017) p 16-22
* Ismael et al (2017)
* Harris & Winstein (2017) p 2-6
* Kimberley et al (2017) p 23-48
* Schiariti et al (2017) p 933-941
 |  |

|  |
| --- |
| **Infant Assessment and Treatment**  |
| Online presentations | * Assessment & Intervention for High Risk Infants
* Infant Risk Factors
* Key Agents for Change
* Serve and Return
* [5 Essential Tummy Time Moves](https://pathways.org/watch/five-essential-tummy-time-moves-how-to-do-tummy-time/)
 | 11:48 minutes9:09 minutes10:11 minutes1:45 minutes4:16 minutes |
| Required readings | * Kilbride et al (2018) p 467-484
* Dusing & Harbourne (2010) p 1838-1849
* Lobo & Galloway (2012) p 12-90-1302
* Surkar et al (2015) p 16-22
 |  |

|  |
| --- |
| **Cerebral Palsy** |
| Online presentations | * Examination & Evaluation: Children with Cerebral Palsy
* Interventions for Children with Cerebral Palsy
 | 21:08 minutes20:28 minutes |
| Required readings | * Jeffires et al (2016) p 7-14
* Novak et al (2013) p 885-910
* Palisano et al (2009) p 66-71
* Rosenbaum et al (2002) p 66-71
 |  |

|  |
| --- |
| **Down Syndrome (Hypotonia)** |
| Online presentations | * Examination & Evaluation: Children with Hypotonia
* Intervention for Children with Hypotonia
 | 9:48 minutes10:46 minutes |
| Required Readings  | * Martin et al (2005) p 274-282
* Martin et al (2007) p 217-226
* Paleg et al (2018) p 57-70
 |  |
| **Sensorimotor Rehabilitation**  |
| Online presentations | * ASD Examination
* ASD Intervention
* DCD Examination
* DCD Intervention
 | 11:45 minutes4:55 minutes9:26 minutes5:30 minutes |
| Required readings | * Blank et al (2019) p 242-285
* Paquet et al (2015) p 1-32
 |  |
| **Adaptative Equipment and Assistive Technology**  |
| Online presentations | * Intro to AT in Pediatrics Part 1
* Intro to AT in Pediatrics Part 2
 | 13:17 minutes20:37 minutes |
| Required readings | * Ahmad (2017) p 62-77
* Mockler et al (2017) p 2034-41
* Rahman et al (2012) p 701-717
 |  |
| **Intervention: Developing Plans of Care**  |
| Online presentations | * Dosing
 | 11:30 minutes |
| Required readings | * Gannotti (2017) p 37-47
* Bailes t al (2008) p 194-198
 |  |

|  |
| --- |
| **Online Post-Test (10 Questions)**  20 minutes |

|  |  |
| --- | --- |
| **SUMMARY OF TIME REQUIREMENTS FOR ONLINE PRE-COURSE** |  |
| Online presentations |  |
| Required readings |  |
| Post-test | 20 minutes |
| **TOTAL TIME REQUIREMENTS** |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| 8:00 |  | Introduction |
| 8:30 – 10:30  |  | Assessment and Treatment of the High Risk Infant |
| 10:30 – 12:00  |  | Assessment and Treatment of Down syndrome/congenital hypotonia |
| 12:00  |  | Lunch |
| 12:30 – 17:00  |  | CP: Assessment and Treatment |
|  |  | will include topics of intensive therapy programs, constraint- induced therapy, and casting/splinting |

|  |  |  |
| --- | --- | --- |
| Day 2/Sunday 8 Hours |  |  |
| 8:00 |  | Review |
| 8:30 – 10:00  |  | Selection and adaptation of special equipment  |
| 10:30 -  |  | Vestibular Rehabilitation  |
| 12:00  |  | Lunch |
| 12:30 – 17:00  |  | Sensory Motor Rehabilitation including vestibular rehabilitation and intervention for ASD and DCD |

**Academic Integrity:**

Each student in this course is expected to abide by the Evidence In Motion and Partners Code of Academic Integrity. Any work submitted by a student in this course for academic credit will be the student's own work.

**References or Bibliography: List all course references here**

Ahmad, F. K. (2015). *Use of Assistive Technology in Inclusive Education: Making Room for Diverse Learning Needs*. *6*(2), 16.

Bailes, A. F., Reder, R., & Burch, C. (2008). Development of Guidelines for Determining Frequency of Therapy Services in a Pediatric Medical Setting. *Pediatric Physical Therapy*, *20*(2), 194. https://doi.org/10.1097/PEP.0b013e3181728a7b

Blank, R. (2012). Information for parents and teachers on the European Academy for Childhood Disability (EACD) recommendations on Developmental Coordination Disorder\*. *Developmental Medicine & Child Neurology*, *54*(11), e8–e9. https://doi.org/10.1111/j.1469-8749.2012.04230.x

Chiarello, L. A. (2017). Excellence in Promoting Participation: Striving for the 10 Cs—Client-Centered Care, Consideration of Complexity, Collaboration, Coaching, Capacity Building, Contextualization, Creativity, Community, Curricular Changes, and Curiosity. *Pediatric Physical Therapy*, *29*, S16. https://doi.org/10.1097/PEP.0000000000000382

Current knowledge on motor disorders in children with autism spectrum disorder (ASD): Child Neuropsychology: Vol 22, No 7. (n.d.). Retrieved April 23, 2019, from https://www.tandfonline.com/doi/abs/10.1080/09297049.2015.1085501

Dusing, S. C., & Harbourne, R. T. (2010). Variability in Postural Control During Infancy: Implications for Development, Assessment, and Intervention. *Physical Therapy*, *90*(12), 1838–1849. https://doi.org/10.2522/ptj.2010033

Gannotti, M. E. (2017). Coupling Timing of interventions with Dose to Optimize Plasticity and Participation in Pediatric Neurologic Populations. *Pediatric Physical Therapy : The Official Publication of the Section on Pediatrics of the American Physical Therapy Association*, *29*(Suppl 3 IV STEP 2016 CONFERENCE PROCEEDINGS), S37. https://doi.org/10.1097/PEP.0000000000000383

Harris, S. R., & Winstein, C. J. (2017). The Past, Present, and Future of Neurorehabilitation: From NUSTEP Through IV STEP and Beyond. *Journal of Neurologic Physical Therapy: JNPT*, *41 Suppl 3*, S3–S9. https://doi.org/10.1097/NPT.0000000000000193

International Classification of Functioning, Disability and Health Core Sets for children and youth with cerebral palsy: a consensus meeting - Schiariti - 2015 - Developmental Medicine &amp; Child Neurology - Wiley Online Library. (n.d.). Retrieved April 23, 2019, from https://onlinelibrary.wiley.com/doi/full/10.1111/dmcn.12551

Ismail, F. Y., Fatemi, A., & Johnston, M. V. (2017). Cerebral plasticity: Windows of opportunity in the developing brain. *European Journal of Paediatric Neurology*, *21*(1), 23–48. https://doi.org/10.1016/j.ejpn.2016.07.007

Jeffries, L., Fiss, A., McCoy, S. W., & Bartlett, D. J. (2016). Description of Primary and Secondary Impairments in Young Children With Cerebral Palsy. *Pediatric Physical Therapy*, *28*(1), 7. https://doi.org/10.1097/PEP.0000000000000221

Kilbride, H. W., Aylward, G. P., & Carter, B. (2018). What Are We Measuring as Outcome? Looking Beyond Neurodevelopmental Impairment. *Clinics in Perinatology*, *45*(3), 467–484. https://doi.org/10.1016/j.clp.2018.05.008

Kimberley, T. J., Novak, I., Boyd, L., Fowler, E., & Larsen, D. (2017). Stepping Up to Rethink the Future of Rehabilitation: IV STEP Considerations and Inspirations. *Pediatric Physical Therapy : The Official Publication of the Section on Pediatrics of the American Physical Therapy Association*, *29*(Suppl 3), S76–S85. https://doi.org/10.1097/PEP.0000000000000435

Lobo, M. A., & Galloway, J. C. (2012). Enhanced Handling and Positioning in Early Infancy Advances Development Throughout the First Year. *Child Development*, *83*(4), 1290–1302. https://doi.org/10.1111/j.1467-8624.2012.01772.x

Martin, K., Inman, J., Kirschner, A., Deming, K., Gumbel, R., & Voelker, L. (2005). Characteristics of Hypotonia in Children: A Consensus Opinion of Pediatric Occupational and Physical Therapists. *Pediatric Physical Therapy*, *17*(4), 275. https://doi.org/10.1097/01.pep.0000186506.48500.7c

Martin, K., Kaltenmark, T., Lewallen, A., Smith, C., & Yoshida, A. (2007). Clinical Characteristics of Hypotonia: A Survey of Pediatric Physical and Occupational Therapists. *Pediatric Physical Therapy*, *19*(3), 217. https://doi.org/10.1097/PEP.0b013e3180f62bb0

Mockler, S. R., McEwen, I. R., & Jones, M. A. (2017). Retrospective Analysis of Predictors of Proficient Power Mobility in Young Children With Severe Motor Impairments. *Archives of Physical Medicine and Rehabilitation*, *98*(10), 2034–2041. <https://doi.org/10.1016/j.apmr.2017.05.028>

Novak I. A systematic review of interventions for children with cerebral palsy: state of the evidence (2013) Developmental Medicine &amp; Child Neurology - Wiley Online Library. (n.d.). Retrieved April 23, 2019, from https://onlinelibrary.wiley.com/doi/full/10.1111/dmcn.12246

Paleg, G., Romness, M., & Livingstone, R. (2018). Interventions to improve sensory and motor outcomes for young children with central hypotonia: A systematic review. *Journal of Pediatric Rehabilitation Medicine*, *11*(1), 57–70. https://doi.org/10.3233/PRM-170507

Probability of walking, wheeled mobility, and assisted mobility in children and adolescents with cerebral palsy - PALISANO - 2010 - Developmental Medicine &amp; Child Neurology - Wiley Online Library. (n.d.). Retrieved April 23, 2019, from https://onlinelibrary.wiley.com/doi/full/10.1111/j.1469-8749.2009.03454.x

Rosenbaum, P. L., Walter, S. D., Hanna, S. E., Palisano, R. J., Russell, D. J., Raina, P., … Galuppi, B. E. (2002). Prognosis for Gross Motor Function in Cerebral Palsy: Creation of Motor Development Curves. *JAMA*, *288*(11), 1357–1363. https://doi.org/10.1001/jama.288.11.1357

Surkar, S. M., Edelbrock, C., Stergiou, N., Berger, S., & Harbourne, R. (2015). Sitting Postural Control Affects the Development of Focused Attention in Children With Cerebral Palsy. *Pediatric Physical Therapy*, *27*(1), 16. https://doi.org/10.1097/PEP.0000000000000097

**Date of Last Course Update: April 2019**

To register: link to the PEDI 6510 CE course webpage where they can go to register (provide link)

You will be prompted to create an EIM account and registration forms will pop up.