

Title: Movement Neuroscience [3-0-0-3]**Content :**

Overview of the cellular components of the nervous system, neural circuits, organization of human nervous system, and neural signaling

- Sensory contributions to movement control
- Somatosensory system
- Visual system
- Vestibular system
- Central contributions to movement control
- Lower motor neuron circuits
- Upper motor neuron control of the brainstem and spinal cord
- Modulation of movement by basal ganglia and cerebellum
- Relevant electrodiagnostic and therapeutic applications that have been developed based on the understanding of movement neurophysiology. Role of rehabilitation technology.

Texts / References:**Text books**

1. Dale Purves...[et al.], Neuroscience, 5th Edition, Sinauer Associates, Inc., 2012, ISBN: 978-0-87893-695-3
2. Eric Kandel, James Schwartz, Principles of Neural Sciences, 5th Edition, McGraw-Hill Education/Medical, 2012, ISBN-13: 978-0071390118
3. John Hall, Guyton and Hall Textbook of Medical Physiology, 13th Edition, Elsevier, 2015, ISBN: 978-1455770052

Reference Books

4. Richard Schmidt, Timothy Lee, Motor Control and Learning – A Behavioral Emphasis, 5th Edition, Human Kinetics, 2011, ISBN-13: 978-0736079617
5. Anne Shumway-Cook, Marjorie Woollacott, Motor Control: Translating Research Into Clinical Practice, 4th Edition, Lippincott Williams and Wilkins, 2011, ISBN-13: 978-1608310180