

Course module summary

Semester/Term	Semester 1			
Course Unit/Module Code:	GP-1			
Course Unit/Module Name:	Neurology and medical care of neurodegenerative disorders			
Credit Value:	05			
Core/Optional	Core			
Pre-requisites	None			
Hourly Breakdown	Theory	Practical	Other	Independent learning
	60 hrs	0	15 hrs, (Discussion)	175 hrs.
Intended Learning Outcomes:				
At the completion of this course student will be able to:				
<ul style="list-style-type: none"> ➤ To describe basic neuroanatomy, structural organization and blood supply in CNS, ➤ To describe the physiology of CNS, autonomic and peripheral nervous system, ➤ To explain the neurobiology and metabolism in CNS, ➤ To explain the normal and pathophysiological nerve conduction, ➤ To describe physiology of speech, voice and swallowing, ➤ To discuss the processes of normal aging vs. processes in neurodegeneration, ➤ To explain the pathophysiology of neurodegeneration, risk factors, and genetic background, ➤ To discuss the pathophysiology, symptoms and management of the most prevalent NDDs, i.e. Alzheimer's, Parkinson and other NDDs, ➤ To distinguish between the pharmacological vs. non-pharmacological therapy in NDDs, ➤ To explain the adverse effects and compare them to the therapeutic goals, ➤ To apply non-pharmacological approaches to prevent health hazards in NDDs, ➤ To describe the need of lifestyle changes in NDDs related to daily life, physical activities, social interactions, cognitive enhancement and accompanying mental disorders. 				
Course Content: (Main Units/Lessons and Sub topics)				
<ol style="list-style-type: none"> 1. Nervous system: Structure and Function, 2. Aging: normal aging vs. neurodegeneration, 3. Neurodegeneration and disease progression, 4. Common neurodegenerative disorders: Alzheimer's, Parkinson's, and other NDDs, 5. Therapy: pharmacological and non-pharmacological therapies in NDDs, 				

6. Lifestyle modification to support persons with NDDs,
7. Mental health and speech/swallowing related management in NDDs.

Teaching /Learning Methods:

Better to use the blended approaches (since it is asked in the application as a %). Give the approaches in %.

35 hrs face to face lecture – 47 %

40 hrs online lectures – 53 %

Assessment Strategy:

(Details: quizzes %, mid-term %, end course unit %, end term/year % ,other % (specify); Theory (%), Practical (%), Thesis (%), Viva (%) , Other (%) (number of questions, type, time allocation and % marks to be given)

Marks allocated for the evaluation of continuous assessment shall be within 20-40% and end semester examinations shall be within 60%-80%.

Formative Assessment (if necessary only)	Summative Assessment	
	Continuous assessments	End course assessment
	30 %	70 %
	15 MCQs – 33 %	30 MCQs – 33 %
	2 SEQs - 67 % (with subquestions)	4 SEQs - 67 % (with subquestions)
	(Time/duration 1h 30 min)	(Time/duration 3 hrs)

Recommended Reading – Mandatory and Optional

(Books, E Books, Journals, Magazines, Web Based teaching material and sites):

Mandatory:

- Beahr M, Frotscher M. Duus Topical Diagnosis in Neurology. Thieme 2005.
- Basic textbooks in Human Physiology

Additional

- Garner CC, Zhai RG, Gundelfinger ED, Ziv NE. Molecular mechanisms of CNS synaptogenesis. Trends Neurosci. 2002 May;25(5):243-51. doi: 10.1016/s0166-2236(02)02152-5. PMID: 11972960
- B. Kundu, An Introduction to Neurochemistry: Application to CNS disorders, 2021
- Graff-Radford J, Lesnick TG, Mielke MM, Constantopoulos E, Rabinstein AA, Przybelski SA, Vemuri P, Botha H, Jones DT, Ramanan VK, Petersen RC, Knopman DS,

Boeve BF, Murray ME, Dickson DW, Jack CR, Kantarci K, Reichard RR. 2021. Cerebral Amyloid Angiopathy Burden and Cerebral Microbleeds: Pathological Evidence for Distinct Phenotypes. *J Alzheimers Dis.* 2021;81(1):113-122. doi: 10.3233/JAD-201536.

- Benedictus MR, Prins ND, Goos JD, Scheltens P, Barkhof F, van der Flier WM. *JAMA Neurol.* 2015. Microbleeds, Mortality, and Stroke in Alzheimer Disease: The MISTRAL Study. *May*;72(5):539-45. doi: 10.1001/jamaneurol.2015.14.

Advanced:

- Metabolomics in Parkinson's disease.
<https://www.sciencedirect.com/science/article/abs/pii/S0065242320301232>
- Metabolomics in degenerative brain diseases
<https://www.sciencedirect.com/science/article/abs/pii/S0006899321005618#f0015>
- McCarter SJ, Lesnick TG, Lowe V, Mielke MM, Constantopoulos E, Rabinstein AA, Przybelski SA, Botha H, Jones DT, Ramanan VK, Jack CR, Petersen RC, Knopman D, Boeve BF, Murray ME, Dickson DW, Vemuri P, Kantarci K, Reichard RR, Graff-Radford. 2021. Cerebral Amyloid Angiopathy Pathology and Its Association With Amyloid- β PET Signal. *J. Neurology.* 2021 Nov 2;97(18):e1799-e1808. doi: 10.1212/WNL.00000000000012770. Epub 2021 Sep 9.

Universities involved in GP-1

University of Colombo

University of Tartu

University of Ljubljana*

Lecturers involved in execution of GP-1

-Sudath, Kisokanth, Shiroma, Herath, Rupa,

-Ülle, Pille, Andres

-Gorazd, Jurij, Jakob