INNOVATIVE TEACHING-LEARNING (PEDAGOGY) REPORT

Title of the Activity	**Generation of Nerve Impulse and Reflex Arc action potential generation**
Subject	**Human Anatomy and Physiology**
Department	**Biotechnology Engineering**
Academic Year	**2023–2024**
Name of the Faculty	**Dr. Shweta Ukey**
Objectives	To enable students to understand complex physiological concepts such as nerve impulse generation and reflex arc mechanisms through practical and demonstration-based learning. This approach helps overcome conceptual difficulties related to polarization and depolarization.
Course Outcomes Addressed	✓ CO3 Model the brain anatomy, structural and functional classification of bones • Improves conceptual clarity on nerve impulse generation by hands-on and visual learning. • Enables students to distinguish between different phases of action potential. • Develops ability to relate theoretical concepts with physiological responses.
Methodology	✓ Students role-played as sodium and potassium ions to enact the movement across the neuron membrane. ✓ Used colored props and arrows to indicate ion direction during polarization and depolarization. ✓ Interactive Q&A sessions during the demonstration to reinforce understanding. ✓ Video clips and diagrams supplemented the hands-on activity.
Learning Outcome	✓ Students were able to describe and visualize the process of nerve impulse generation and reflex arc. They demonstrated improved retention and understanding of complex neural mechanisms post demonstration.

Dr. Shweta Ukey


I am Ligand Gated Na+ ion Channel
I listen to neurotransmitters
I am Voltage gated Na+ ion Channel
I work at -35 mv
I am leaky K+ ion channel
I bring the membrane potential to -70 fro m +80 mv