Learning Outcomes:

At the end of the course students will:

- be able to explain how the anatomy and physiology of neurons contribute to the creation and maintenance of membrane potential and mechanisms of neuronal signalling including the synapse and action potential.

- be able to explain the physiological basis of sensation and perception, including the design and function of important sensory systems including the skin, auditory, visual, vestibular and chemical sensation.

- be able to explain how muscles are built from molecular to organ level, how they are regulated, how their anatomy and physiology give rise to emergent properties of muscle contraction, and the basis of neural control of muscles.

- be able to explain how endocrine systems function, including hormone/target interactions, mechanisms of hormone function, hypothalamic-pituitary interactions, and regulation of growth, development, reproduction and metabolism.

- be able to apply the physiological systems and principles under consideration to explain how they promote maintenance of homeostasis and normal body function in animals.

- be expected to apply their knowledge about these systems to perform lab/inquiry-based experiments, and to collect and present their results in written scientific reports that demonstrate the ability to critically assess and explain their data.