BSHND 206 : HUMAN PHYSIOLOGY–II

Course Learning Outcomes:

- To understand the functions of respiratory, endocrine, nervous, immune and reproductive systems
- To acquaint knowledge about hormonal and neural interactions on metabolism

Content-Theory:

1. **Respiratory system:**
   - Respiratory mechanics,
   - Gas transport and exchange mechanisms,
   - Control of respiration,
   - Respiratory capacities and volumes,
   - Nonrespiratory functions of lungs;
2. **Immune system and lymphatic system:**
   - Body defence system and regulation;
3. **Endocrinology and reproduction:**
   - Reproductive physiology,
   - Role of hormones in spermatogenesis,
   - Menstrual cycles and pregnancy,
   - Energy balance and temperature regulation;
4. **Nervous system:**
   - Principles of neuronal and hormonal communication systems,
   - Functional organization of nervous system,
   - Central, peripheral and autonomic nervous system,
   - Action potentials,
   - Types of neurotransmitters and their role in pathophysiological integration in body;
5. **Musculoskeletal system:**
   - Principles of neuromuscular physiology.

Content-Practical:

- Demonstration of the location of endocrine glands in laboratory animal;
- Adrenalectomy and the effect of adrenaline on metabolism in rats;
- Effect of adrenaline on metabolism;
- Nerve muscle preparation,
- Effect of temperature on single muscle twitch, muscle and nerve irritability,
- Neuromuscular fatigue,
- Normal heart activity;
- Hormonal assay:
- Digestive, growth & reproductive.

Teaching-Learning Strategies:

Teaching will be a combination of class lectures, class discussions, and group work. Short videos/films will be shown on occasion.

Assignments:

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination:

Sessional Work: 25 marks

Midterm Exam: 35 marks

Final Exam: 40 marks

Recommended Readings:

1. Brar, R.S., Sandhu, H.S. & Singh, A. (2002). Veterinary Clinical Diagnosis by Laboratory Methods. Kalyani Publishers Ludhiana, New Delhi, India.
2. Gillian, P. & Richards, C.D. (2006). Human Physiology: The Basis of Medicine, (3rd ed.) Oxford University Press, London.
3. Guyton, A.C. & Hall, J.E. (2006). Textbook of Medical Physiology, (11th ed.) J.F. Kennedy Blvd., Philadelphia, USA.
4. Rahman, Z.U., Aslam, B., Khan, J.A. & Khaliq, T. (2007). Manual of Physiology-I&II, (2nd ed.). MAS Computers, Faisalabad, Pakistan.
5. Tortora, G.J. (2008). Principles of Anatomy and Physiology, (12th ed.) John Wiley & Sons, Inc., New York, USA.