

Semester	<b>II</b>
Course <sup>*1</sup>	<b>Major-2</b>
Paper Title	<b>Mammalian physiology</b>
Paper Code	<b>C1BT230222T / C1BT230222P</b>
No. of Credits <sup>*2</sup>	<b>4 (Th =3 , Pr = 1)</b>
Theory / Practical / Composite	<b>Composite</b>
Minimum No. of preparatory hours per week a student has to devote	6 (3+3)
Number of Modules	2
Syllabus	<p><b>Module A:</b></p> <p><b>UNIT I: Circulation:</b> Composition of blood: plasma proteins &amp; their role, blood cells. Mechanism of coagulation of blood, blood groups, blood pressure. Mechanism of working of heart.</p> <p><b>UNIT II: Respiration:</b> Exchange of gases, transport of O<sub>2</sub> and CO<sub>2</sub>, oxygen dissociation curve.</p> <p><b>UNIT III: Nervous System:</b> Functional relevance of nervous system, ultrastructure of neurons and glial cells and functional implications.</p> <p><b>Module B:</b></p> <p><b>UNIT IV: Gastro-intestinal physiology:</b> Phases of nutrition, functional relevance of gastro-intestinal tract and digestive glands.</p> <p><b>UNIT V: Skeleto-muscle physiology:</b> Functional relevance of skeleto-muscular system and joint physiology, basic principles of skeletal muscle contraction.</p> <p><b>UNIT VI: Excretion:</b> Functional relevance of renal system, ultra-structure of nephron and functional implications.</p> <p><b>UNIT VII: Endocrine coordination:</b> Hormones and receptors, Endocrine glands and their functional significance, endocrine pathologies.</p> <p><b>UNIT VIII: Thermoregulation and physiological adaptations:</b> Basic thermoregulatory adaptations, basic physiological adaptations in high altitude and sea depth.</p> <p><b>Practical</b></p> <ol style="list-style-type: none"> <li>1. Determination of blood groups</li> <li>2. Determination of TLC</li> <li>3. Determination of DLC</li> <li>4. Counting of mammalian RBCs</li> <li>5. Determination of haemoglobin.</li> <li>6. Qualitative tests for physiologically important substances.</li> <li>7. Study of histology of mammalian tissue.</li> </ol>

Learning Outcomes * <sup>3</sup>	<ol style="list-style-type: none"> <li>1. Gaining a comprehensive overview of the principles and basic concepts of mammalian physiology, particularly human physiology.</li> <li>2. Acquiring a comprehensive idea about blood, circulatory system and functioning of the heart.</li> <li>3. Acquiring a comprehensive idea about respiratory biology.</li> <li>4. Acquiring an advanced understanding of skeleton-muscle physiology, digestive system functioning and endocrine physiology.</li> <li>5. Gaining an overview of renal physiology and physiological adaptations.</li> <li>6. Being familiarize with laboratory techniques and equipment used in physiological studies.</li> </ol>	
Reading/Reference Lists * <sup>4</sup>	<p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. J.E. Hall. Guyton and Hall Textbook of Medical Physiology.</li> <li>2. K. Barrett, S. Barman et al. Ganong's Review of Medical Physiology.</li> <li>3. C.C. Chatterjee. Human Physiology.</li> </ol> <p><b>Practical</b></p> <ol style="list-style-type: none"> <li>1. K. C. Ghose, B. Manna. Practical Zoology</li> </ol>	
Evaluation	<p>Theory CIA:12 Semester Exam: 45</p>	<p>Practical (if applicable) CA: 30 marks Continuous Assessment [Assessment modalities will be declared in due course by the Course Instructors] End Semester Viva: 8 Marks Attendance: 2 marks</p>
Paper Structure for Theory Semester Exam	<p><b>Module A: 18 marks</b> Any two from three questions: Each of 2 marks Any two from three: Each of 7 marks with subparts [No sub-part will be less than 2 marks and more than 5 marks]</p> <p><b>Module B: 27 marks</b> Any three from four questions: Each of 1 mark Any three from four: Each of 8 marks with subparts [No sub-part will be less than 2 marks and more than 5 marks]</p>	