

**Programme:** M. Sc. (Zoology)

**Course Code:** ZOO-307

**Number of Credits:** 2

**Effective from AY:** 2018-19

**Title of the Course:** Molecular endocrinology

<b><u>Prerequisites for the course:</u></b>	Basic knowledge on animal anatomy, physiology and endocrinology.	
<b><u>Objective:</u></b>	This course provides molecular level insight on endocrinological events in animal body to focus on various approaches to understand hormone action and its related applications in the field of cellular pathologies.	
<b><u>Content:</u></b>	<b>Module 1:</b> Hypothalamic and Hypophyseal hormones and their functions; Structure and functions of the GI tract hormones. Neuroendocrine feedback and response to varied stimuli.	12 hours
	<b>Module 2:</b> Mechanisms of hormone action: Receptors and types- membrane receptors, nuclear receptors; receptor regulation and signal transduction, second messengers, permissive actions of hormones and termination of hormone action. Cross talk between steroid and protein hormone pathways.	12 hours
<b><u>Pedagogy:</u></b>	Lectures/ tutorials/assignments/self-study	
<b><u>References/Readings</u></b>	<ol style="list-style-type: none"><li>1. Bolander FF, Molecular Endocrinology, Elsevier, UK</li><li>2. Hadley ME and Levine JE, Endocrinology, Adeson-Wesley publication, USA.</li><li>3. Melmed S, Polonsky KS, Reed P et al., William's text book of Endocrinology, Willey Blackwell Publication, UK.</li><li>4. Franklyn F. Bolander. Molecular Endocrinology: Elsevier- Academic Press.</li><li>5. J. Darnell, H. Lodish and D. Baltimore , Molecular Cell Biology: Scientific American Book, Inc. USA</li><li>6. Norris, D. O., Vertebrate Endocrinology: Academic Press, New York.</li></ol>	
<b><u>Learning Outcomes</u></b>	<ol style="list-style-type: none"><li>1. Essential in depth understanding of the molecular synthesis, secretion and action of hormones respectively other regulatory substances of animals.</li><li>2. Vision to understand its relatedness to various hormone base disorders and its application to other fields of cell biology.</li></ol>	