IISER Pune - Course Content

Semester	JAN 2024
Open to Semester	4
Course Code	BI2223
Course title	Physiology (E)
Nature of Course	LE - Lecture
Credit	3
Coordinator and participating faculty (if any)	**Dr. Nishad Matange** Dr. Nishikant Subhedar Dr. Satyajit Rath
Pre-requisites	None
Objectives	BI2223 aims to introduce students to central ideas in Physiology. The course will draw on examples from animal, plant and microbial systems to abstract key principles in physiology such as homeostasis, feedback, integration and emergence. After completing this course, students should be able to understand the following: 1. Homeostasis and allied ideas in physiology. 2. The need for regulation in living organisms. 3. Mechanisms of regulation such as feedback loops. 4. How regulatory mechanisms are organized and integrated. 5. The origins of emergent properties in physiological processes. This course is useful for students looking to understand biology through an integrative lens.
Course content	Following themes will be discussed during this course: (Each theme will be discussed for 4-8 lectures) 1. Homeostasis and allied principles 2. Levels of organization and their integration for physiological functions 3. Nutrition/Energy homeostasis 4. Water/Fluid Ion homeostasis 5. Physiology of gases 6. Physiology of defense
Evaluation / Assessment	End sem: 35% Mid sem: 35% Continuous assessment: 30%

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Suggested readings	1. Physiology by Linda Costanzo, 2018, 6th Edition 2. Animal Physiology by Hill, Wyse and Anderson, 2012, 3rd Edition 3. Readings and materials provided in class as needed
When Next	
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