UZO-555 Physiological Systems and Adaptations -I Cr. (2)

Course Contents:

Cardiovascular System: Blood and homeostasis; Physiology of cardiac muscles; Automaticity and rhythmicity in heart activity and cycle; Electrocardiography; Regulation of heart activity; Hemodynamics; Arterial system; Microcirculation and lymphatics; Control of cardiac output; Special circulations: Cutaneous, skeletal, coronary, cerebral, fetal.

Respiratory System: Overview of respiratory system; Pulmonary and bronchial circulations; Mechanical aspects of breathing; Transport of oxygen and carbondioxide; Regulation of ventilation; Respiratory responses in extreme conditions.

Renal System: Elements of renal function; Tubular function in nephron; Control of body fluid volume and osmolality; Potassium, Calcium and Phosphate homeostais; Role of kidney in acid-base balance.

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 term Exam:	40 marks

Books Recommended:

1. Randall, D., Burggren, W., French, K. and Fernald, R., 2002. Eckert Animal Physiology: Mechanisms and Adaptations, 5th ed. W.H. Freeman and Company, New York
2. Bullock, J., Boyle, J. and Wang, M.B., 2001. Physiology, 4thEd.Lippincott, Williams and Wilkins, Philadelphia.
3. Berne, R.M. and Levy, M.N., 2016. Principles of Physiology, 3rd Ed.. St. Lious, Mosby.
4. Guyton, A.C. and Hall, J.E., 2020. Textbook of Medical Physiology, 14th Ed.. W.B. Saunders Company, Philadelphia.
5. Withers, P.C., 1992. Comparative Animal Physiology. Saunders College Publishing, Philadelphia.
6. Schmidt-Nelsen, K., 2008. Animal Physiology, Adaptation and Environment, 5th Ed.. Cambridge University Press, Cambridge.
7. Tharp, G. and Woodman, D., 2015. Experiments in Physiology, 11th Ed. Prentice Hall, London

UZO-556 Physiological Systems and Adaptations –I (Lab.) Cr. (1)

Course Contents:

Experiments on the study of heart in prepared frogs; Study of blood pressure in various physiological states; Study of electrocardiograms; Blood coagulation study. Determination of oxygen consumption in fish and mouse and effects of factors; Demonstration of respiratory volume and pulmonary function tests.

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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 term Exam:	40 marks