



INSTRUCTION DIVISION, FIRST SEMESTER 2011-2012
COURSE HANDOUT (PART II)

Date: 01.08.2011

In addition to Part – I (General Handout for all courses) printed on Page 1 of the timetable book; this portion gives further specific details regarding the course.

Course Number : BIO C342
Course Title : GENERAL PHYSIOLOGY
Instructor In-charge : P. SANKAR GANESH
Instructor : P. Sankar Ganesh

Course Description :

Basic functional processes in plants and animals, these include plant water relations, nutrients, plant growth regulators, photoperiodism, vernalization in plants and circulation, respiration, excretion, nervous system, hormonal mechanisms and irritability in animals.

Scope and Objectives of the Course:

This course attempts to bring the awareness of major features of physiology of both plants and animals. Emphasis will be given to functions and adaptations, as related to the survival of organisms in their natural environment.

Text Books :

T1: Salisbury, F.B and Ross, C.W. *Plant Physiology*, 4th Ed., Cengage Learning India Private Limited, Third Indian Reprint 2009.

T2: Sherwood, L., Klandorf, H. and Yancey, P.H., *Textbook of Animal Physiology*, Cengage Learning, India Edition, 2008.

Reference Books :

R1: Taiz, L. and Zeiger, E., *Plant Physiology*, 3rd Ed., Panima Publishing Corporation, First Indian Reprint, 2003.

R2: Russell, J.P., Wolfe, L.S., Hertz, P.E., Starr, C. and McMillan, B., *Plant and Animal Physiology*, Cengage Learning India Private Limited, First Indian Reprint 2009.

R3: Campbell, Reece and Simon, *Essential Biology with Physiology*, 2nd Ed., Pearson, 2010.

R4: Elaine N. Marieb, *Essentials of Human Anatomy and Physiology*, 8th Ed., Pearson, 2009.

Selected Web Resources:

www.plantphys.net/

<http://www.bio.davidson.edu/people/midorcas/animalphysiology/animalphyshome.htm>

Course plan :

Lecture Number	Learning objectives	Topics to be covered	Reference Chap (Books)
<i>Part I. Animal Physiology</i>			
1	Foundations	Homeostasis	1(T2); 6(R2); 21(R3)
2-4	Complex series of organs & glands that processes food	Digestive system	14(T2), 15(R2); 22(R3)
5-6	Regulating the Internal Environment	Excretory system	12(T2); 16(R2); 21(R3)
7-9	Whole body regulation & integration	Nervous system	5(T2); 7,8,9(R2); 27(R3)
10-12	Understanding hormones and their function	Endocrine system	7(T2); 10(R2); 25(R3)
13-14	Why do we need to breathe?	Respiration system	11(T2); 14(R2); 23(R3)
15-17	Self maintenance	Circulatory system	9(T2); 12(R2); 23(R3)
18-19	Body Immunity	Defense system	10(T2); 13(R2); 24(R3)
20	How animals multiply?	Reproductive system	16(T2); 17(R2); 26(R3)
<i>Part II. Plant Physiology</i>			
21-22	Knowing about plants	Plant Tissue System	Class notes; 1(R2); 28(R3)
23-25	Learning water and its interaction with plant body	Diffusion, Water potential, Osmosis	2,3(T1); 3(R1); 2(R2); 5(R3)
26	Learning water and its interaction with plant body	Transpiration and photosynthesis	4(T1); 4(R1); 2(R2); 7(R3)
27-28	How nutrients are absorbed and distributed in tissues?	The Ascent of Sap: Mechanism and anatomy of pathway	5(T1); 4(R1); 3(R2); 29(R3)
29	How nutrients are absorbed and distributed in tissues?	Mineral Nutrition: Essential elements and their function	6(T1); 5(R1); 3(R2); 29(R3)
30-31	How nutrients are absorbed and distributed in tissues	Absorption of minerals	7(T1); 5&6(R1), 2(R2); 29(R3)
32-33	To know how metabolic end products are distributed	Transport of material in phloem	8(T1); 10(R1); 2(R2); 29(R3)
34-35	How plants grow?	Growth and development	16(T1); 16(R1); 5(R2); 28(R3)
36-37	What controls growth?	Hormones and Growth regulators: Auxins and Gibberellins	17(T1); 19,20(R1); 5(R2); 29(R3)
38	What controls growth?	Cell division and seed maturation: Cytokinins and Abscisic acid	18(T1); 21,23(R1); 5(R2); 29(R3)
39	Growth responses to temperature	Vernalization	22(T1); 24(R1); 5(R2); 29(R3)
40	Photoperiodic response	Photoperiodism	23(T1); 24(R1); 5(R2); 29(R3)

Evaluation scheme :

Evaluation component	Duration	Weightage, %	Date and time	Nature of the Component*
Test – 1	50 Min	10	25.08.2011 4.00 – 4.50 PM	OB
Test – 2	50 Min	15	20.10.2011 4.00 – 4.50 PM	CB
Surprise tutorial tests/ quiz	Diverse	20	Continuous Evaluation	CB
Assignments/ Class work	Diverse	15	Continuous Evaluation	OB/ Take-Home
Comprehensive examination	3 Hrs	40	05.12.2011 2:00 PM – 5:00 PM	CB

*OB: Open book, CB: Closed book

Chamber consultation hour: To be announced in the class.

Grading policy: Award of grades will be guided in general by the histogram of marks. Decision on border line cases will be taken based on individual's sincerity, student's regularity in attending classes, and the instructor's assessment of the student.

Make-up policy: Make-up for Test 1 or 2 will be given only in genuine (medical emergency) cases of absence. If the absence is anticipated, before the examination, prior permission of the Instructor-in-charge is necessary. The request for make-up should reach the Instructor-in-charge at the earliest. Make-ups for tutorial tests/ quizzes and assignments are not given. Also refer to Clause 4.07 of BITS *Academic Regulations* for more details.

Notices: All notices/ announcements regarding this course shall be displayed in the notice board of Biological Sciences Group, located at the 1st floor of A-Block.

**Instructor-in-charge
BIO C342**