

Pt. Ravishankar Shukla University, Raipur (Chhattisgarh)
School of Studies in Life science (Syllabus 2018-2020)

Choice Based Syllabus for Second Semester (January-June)

Elective Paper: Plant Cosmetics

Credit: 3; Maximum marks 80+20

Flowering plants: Commercial Plant bioregulators for rooting, flowering, fruiting and seed setting. Plant cosmetics for; colour, texture, brightness and longevity of flowers and leaves, Plant cosmetics in enhancing the quantity and quality of biomolecules of medicinal plants; tissue and root culture.

Non-flowering plants: Plant cosmetics for; bushy nature, bright and colour leaves of crotons and other plants. Plant cosmetics for leafy plants, aromatic plants, indoor plants and lawn grass.

Plant bio regulators in plant based technology for; Cut, vase flowers, orchid cut-flower industry and bonsai plants. Post-harvest management and marketing issues of flowers, fruits and seeds.

Plant cosmetics in rose flower industry; positive response in stem length, pedicel length, longevity of buds and flower head, compactness and fresh weight.

Books Recommended:

Fosket DF	Plant Growth & Development
Leopold AC & Kriedemann PE	Plant Growth & Development
Moore TC	Biochemistry & Physiology of Hormones
L Taiz & E Zeiger	Plant Physiology
BB Buchanan, W Gruissem & RL Jones	Biochemistry and Molecular Biology of Plants
MB Wilkins	Advanced Plant Physiology
JA Hopkins	Introduction to Plant Physiology
FB Salisbury & CW Ross	Plant Physiology
Hans-Walter Heldt	Plant biochemistry & Molecular Biology

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Elective Paper: Economic Zoology

Credit: 3; Maximum marks 80+20

Economic Entomology:

Sericulture: silk moth and worm, mulberry silk worm, economic importance of silk. Apiculture: honey bees and its social organization, methods of bee keeping, products of bee keeping and its economic importance. Lac culture: lac insect, cultivation of lac, lac composition, economic importance of lac. Insect Pest Management: Biological, hormonal and pheromonal control.

Aquaculture:

Fish culture: types of fish culture in India, methods of fishing, by-product of fishing industry. Prawn culture: culture of fresh water prawn, methods of prawn fishing, preservation and processing of prawn. Pearl culture: pearl formation, pearl industry and artificial insertion of nucleus, harvesting and composition of pearl.

Poultry:

Quail (Bater) farming: general characteristics of quail, egg production and hatching, brooding and rearing, management of adult quail. Quail housing equipments, nutrition, products technology (egg, meat and their products).

Books Recommended

1. Shukla & Upadhyaya: Economic Zoology, Rastogi Publication, Meerut
2. Panda et al: Quail production technology, Central avian research institute, Izatnagar
3. Venketaraman: Economic Zoology, Sudarsana Publication
4. Srivastava: A Text Book of Applied Entomology, Vol. II & III, Kalyani Publication

School of Life Sciences, PRSU, Raipur

Choice Based Syllabus for Third Semester (July- December)

Elective Paper: Vector Borne Diseases

Credit: 3; Maximum marks 80+20

Vectors

Definition; importance of studying vectors. A brief introduction of the various types of vectors including Arthropods and Molluscs and their ecological aspects related to disease transmission.

Vector borne diseases

An overview; Brief introduction of important vector borne diseases including Malaria, Chickungunia, Japanese encephalitis, Trypanosomiasis, Leishmaniasis, Lymphatic filariasis, Oncocerciasis, Tick borne diseases, Schistosomiasis.

Prevention and control of vectors

Vectors and their control: Chemical and biological methods, environmental management, community and personal prophylaxis.

Meeting challenges and role of public health stake holders in controlling vector borne diseases

Books Recommended

1. Chatterjee KD: Medical Parasitology
2. Park and Park: Preventive and Social Medicine
3. JC Cheng: A Text Book of Human Parasitology
4. Anantnarayana and Panicker: A Text Book of Medical Microbiology

Choice Based Syllabus for Third Semester (July-December)

Elective Paper: Rhythms in Life

Credit: 3; Maximum marks 80+20

Origin and evolution of rhythms; Types of rhythms and how to study rhythms?

Historical developments in chronobiology. Different types of geophysical and biological cycles with examples of circadian, ultradian and infradian rhythms. Autorhythmometry

Rhythms are ubiquitous from microbe to man

Characteristics of circadian rhythm: Free-run, Temperature and nutrition compensation, and Entrainment. Zeitgeber Time (ZT) and Circadian Time (CT). Example of circadian rhythms in plants, cyanobacteria, fungi, *Drosophila*, fish, mammals, and humans.

Application of principles of chronobiology to augment human welfare

Application of principles of Chronobiology in management of diseases with specific examples based on cancer and sleep disorders; and Shift work and Jet Lag

Recommended Books

S Binkley	Biological Clocks – Your Owner’s Manual
MK Chandrashekar	Time in the Living World
R Refinetti	Circadian Physiology
JC Dunlap, JJ Loros & PJ DeCoursey	Chronobiology: Biological timekeeping
WG van Doorn and U van Meeteren	Flower opening and closure: a review
AK Pati	Chronobiology: The dimension of time in biology and medicine; PINSAs (Biological Sciences), PART B 67 (6), 323-372, 2001
AK Pati, A Chandrawanshi, A Reinberg	Shift work: Consequences and management, Current Science, 81 (1), 32-52, 2001
AK Pati, A Parganiha	Shift work: Circadian rhythm disruption and beyond PINSAs (Biological Sciences), PART B 71 (5/6), 229, 2005
AK Pati	Chronobiology: Implications of circadian rhythms, National Academy Science letters 27 (7-8), 233-248, 2004.
JD Palmer	The living clock