



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Science

Department of Life Science

Generic Electives (GE) Post Graduate Courses

COURSE CODE	Category	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDI TS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
GPLS101	GE	Response of Plants to Light, Magnetic Field, Plasma and Sound Waves	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment shall be based following components: Quiz/ Assignment/ Project / Participation in Class, given that no component shall exceed more than 10 marks.**

Course Objectives:

1. To study the response of plants to physical forces
2. To understand the mechanism of plant responses

Course Outcomes:

1. Students will understand the responses of plants to their physical environment
2. Students will know the agricultural importance of these responses

Unit – I

Solar radiation, Plant Photoreceptors and photo-responses

Mechanism of signal transduction in photosynthesis, phototropism and Photomorphogenesis

Modulation of photo-responses in agriculture.

Unit – II

Magnetism and Magnetic Fields, Response of plants to magnetic fields

Biochemical changes induced by magnetic fields in carbon and nitrogen metabolism


Growth and yield of crop plants after magneto-priming of seeds


Unit – III


Plasma and plasma generators, Response of plants to Plasma

Biochemical changes induced by plasma

Plasma and applications in agriculture


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GPLS101 Response of Plants to Light, Magnetic Field, Plasma and Sound Waves

Unit – IV

Sound waves – production, modulation and measurement

Impact of sound waves on plants

Biochemical changes induced by sound waves

Growth and yield of plants modulated by sound waves

Unit – V


Solar UV radiation, Importance of solar UV during evolution, Ozone hole and leakage of UV


UV photoreceptors in plants, Physiological and biochemical changes induced by UV- B radiation


Deleterious effects of UV – B, Agricultural advantages of UV-B exclusion

BOOKS:

1. Concepts in Photobiology, Photosynthesis and Photomorphogenesis
Ed: Singhal et al, Elsevier, 1999
2. Magnetobiology– Vladimir N. Binhi, 2002


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