Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Science
Department of Life Science
Generic Electives (GE) Post Graduate Courses

BTPGE02 Response of Plants to Light, Magnetic Field, Plasma and Sound Waves

COURSE CODE	Category	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTPGE02	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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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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