



# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Science

### Department of Life Science

#### Generic Electives (GE) Under Graduate Courses

#### SEMESTER IV

COURSE CODE	Category	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			-		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	.	.				
<b>BTUGE02</b>	<b>GE</b>	<b>Photobiology</b>	60	20	20	-	-	3	-		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 give a general idea about Photobiology to students of all disciplines.
2. To give an idea about the role of light in life.

#### Course Outcomes:

1. Students will understand the role of light in basic biological functions.
2. Students will understand about radiation as a component of environment.

#### Unit -I

Solar Radiation – Terrestrial and Extra-terrestrial; Photoreceptors and Photo-biological responses in Plants and Animals; Absorption and Action Spectra

#### Unit – II

Photosynthesis – Primary Light Reactions; Photosystem I and II; Electron Transport Chain and Photophosphorylation; Calvin Cycle and Carbon Fixation in C3, C4 and CAM Plants; Photorespiration

  
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**BTUGE02 Photobiology**

**Unit – III**

Photomorphogenesis and discovery of Phytochrome; Properties and Mechanism of Phytochrome; Cryptochrome – blue light photoreceptors.

**Unit – IV**

Photoperiodism and Physiology of Flowering; Circadian Rhythms and Vernalization

Vision cycle; Photoperiodism in Animals

**Unit – V**

Ozone hole and UV – B Radiation; Biological effects of UV – B; UV – B and Plant Metabolism; UV – B Environmental and Agricultural Importance.

**BOOKS:**

1. Concepts in Photobiology: Photosynthesis and Photomonogeneticis.
2. Photobiology – the Science of Light and Life – Lars Olof Bjom, Springer2012.
3. Photobiology – Elli Kohe – 1995, Rene Santos, Joseph Hirschberg.
4. Textbook of Photobiology, S.R. Mishra, 2010, Discovery Publishing Pvt. Ltd.

  
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