

SUBJECT NO-AG60105, SUBJECT NAME- ADVANCED PLANT PHYSIOLOGY

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Stress and Adaptation: An Introduction to stress concept in plants - salt, drought and freezing tolerance. Mechanism of oxygen activation, role of antioxidants. GAS (General Adaptation Syndrome) and environmental stress. Molecular mechanism of stress resistance: Overproduction of osmoprotectants, synthesis of phytochelatins, chaperonin. Stress tolerance and signaling cascades. Light and plant development: Chlorophyll - biosynthesis and degradation; Plant photoreceptors - domain structure and mode of action. Flowering: Florigen concept; circadian rhythms and biological clock; ABC model. Phytohormones: Auxin - receptors, domain structures of Aux/IAA and ARF, molecular mode of action, auxin efflux carrier and BIG protein; new phytohormones - jasmonates, brassinosteroids, phytosulfokines and strigolactone. Chemical ecology: ecochemicals - origin and diversity, functional roles and evolution. Impact of chemical ecology on agriculture.