PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement

facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS067 II 2025 (Sruthi Surendaran)

Plant Modelling 2: Basic Concepts for Using BioCro model

Name of the PMRF student

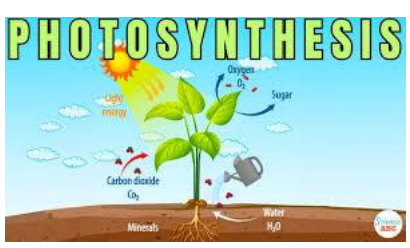
Sruthi Surendran, IIT Palakkad

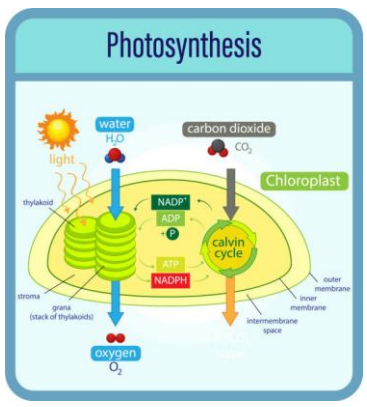
Required background of the students taught

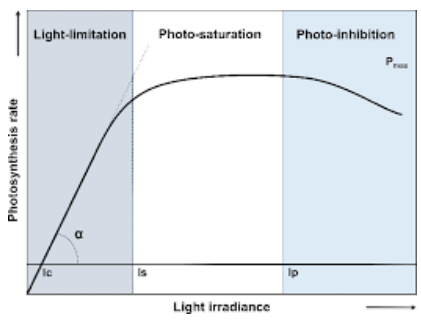
Any engineering disciplines. Preferable for civil engineering, agricultural engineering, water resources engineering, botany specialisations. Any programming skill; preferrably R. All the theory required will be taught during the sessions.

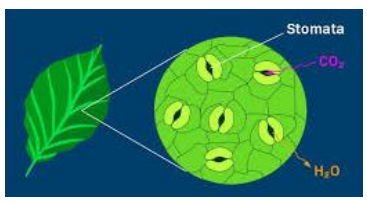
Online session coordinator

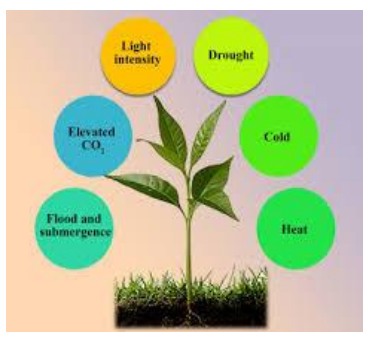
Will be chosen from the list of registrants











Details of the content of the module

This course explores how plants interact with their environment, focusing on photosynthesis, water relations, energy balance, and adaptation. Covering foundational topics like C3, C4, and CAM pathways to advanced models such as the Farquhar von Caemmerer Berry (FvCB) and Ball-Berry models, it bridges theory and application. By the end of this course learners will be able to assess plant responses to climate change, equipping them with the knowledge for mathematical modelling of plants for sustainable agriculture.

Module 1: Introduction to Plant Ecophysiology (2)

Module 2: In-Depth Exploration of C3 Leaf Physiology (2)

Module 3: Leaf-Scale Water Relationships (2)

Module 5: Coupling Photosynthesis Rate and Stomatal Conductance (2)

Module 6: Leaf-Scale Energy Balance (2)

Module 7: Using plant physiological model (2)

Schedule of the module

Course Start date: 10th August, 2025 (Tentative)

Course End date: 31st August, 2025 (Tentative)

Lecture, problem solving sessions and discussion.

Lecture days : Every Friday, Saturday and Sunday

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link: https://forms.gle/1g83VrJWs2dZRtQY6