

ST. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM
V SEMESTER **BIOTECHNOLOGY** TIME: 3 Hrs/ Week
BTH-E1-5754 (2) **HYDROPONICS CULTIVATION** Max. Marks: 50
(Skill enhancement course (Elective))

W.e.f 20AH Batch

PRACTICAL SYLLABUS – IIIB

OBJECTIVE: To enable the students to

1. List out macronutrients, micronutrients- functions and effect on plants, deficiency symptoms.
2. Demonstrate the importance of temperature and light in hydroponics
3. Develop skill of media production for Hydroponics cultivation
4. Equip with the skill of weed management, diseases and pest management

COURSE OUTCOMES: Students will

- **CO1:** Be able to acquire awareness on hydroponic setup and maintain the hydroponic plants/crops
- **CO2:** Demonstrate the skills to manage the pests and diseases
- **CO3:** Explain the cultivation methods for various crops

PRACTICAL COURSE:

1. Handling of tools required for hydroponic setup
2. Preparation of macronutrients and micronutrients solutions/stock cultures
3. Preparation of different media for hydroponic system.
4. Evaluating the effect of bio fertilizers on hydroponic cultivation
5. Weeding management techniques -demonstration
6. Demonstration of pests and diseases control and prevention methods
7. Cultivation of tomato by hydroponic system
8. Cultivation of chilli through hydroponic cultivation

REFERENCES

1. Keith Roberto, *How to Hydroponics*. The future Garden Press New York. 4th Edition
2. Howard M. Resh. *Hobby Hydroponics*. CRC Press, USA.
3. Prasad S and Kumar U. *Green House management for Horticultural crops*. Agro-Bios India.
4. Dahama A.K. *Organic Farming for Sustainable Agriculture*. Agrobios, India
5. Subba Rao N.S. (1995). *Biofertilizers in Agriculture and Forestry*. Oxford and IBH Publishing Company. Pvt. Ltd New Delhi.

Co-curricular activities:

a) Mandatory: (Training of students by teacher on field related skills: 15hrs)

1. **For teachers:** Training of students by teacher in laboratory and field for a total of 15hrs on soilless culture system. Demonstrating importance of nutrients/light/temperature for successful hydroponic cultivation.
2. **For students:** Visit to local Hydroponics cultivation farm, observing the crop growths. Submission of field work report of 10 pages in the prescribed format.
3. Maximum marks for field work report: 05
4. Suggested format for field work report: Title page, student details, content page, introduction, work done, findings, conclusion and acknowledgements.
5. Unit test (IE)

b) Suggested co-curricular activities:

1. Visit to local hydroponics cultivation farm
2. Learning techniques of basic tools and instruments handling related to hydroponics
3. Training of students by related subject experts
4. Preparation of videos on media preparation and application in hydroponics
5. Attending special lectures, group discussions and seminars on related topics

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