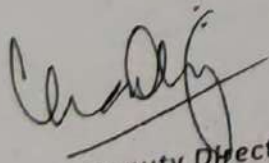
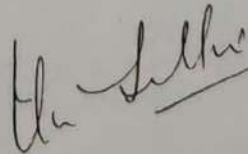


Syllabus for Certificate Course on FLORICULTURE

(Duration: ONE semester)



Deputy Director
State Horticulture Nursery
Dimapur : Nagaland



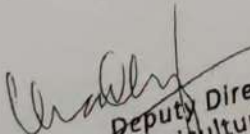
INTRODUCTION

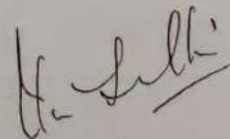
Flower cultivation has been practiced in India since times immemorial but it is only in the recent years that floriculture has blossomed into a viable business sector. At present the total area under floriculture cultivation is about 73,970 ha. with a production of 4.60 lakh tonnes of loose flowers and 1155 lakh (numbers) of cut flowers in the country. Government of India has identified floriculture as a sunrise industry and accorded it 100% export oriented status. Owing to steady increase in demand of flowers, floriculture has become one of the important Commercial trades in Agriculture. Hence commercial floriculture has emerged as hi-tech activity-taking place under controlled climatic conditions inside greenhouse with higher potential per unit area than most of the field crops and is therefore a lucrative business. Indian floriculture industry has been shifting from traditional flowers to cut flowers for export purposes.

Flower cultivation in Nagaland state is yet to put strong footing besides having great commercial importance. Floriculture has been only a hobby occupation in the state however; with the introduction of commercial floriculture through cultivation of different flowers under protected conditions growing of cut flowers like rose, liliun, anthurium, gerbera, alstromeria, carnation, orchids and other ornamentals, greens, foliage plants, etc has led to their use for bouquets and arrangements for gifts as well as decoration of both home and workplace.

Concrete efforts are essential to improve the productivity which is only possible through adoption of modern technology. This technology could be transferred to the producers through training. So courses containing advanced technology in the areas of Floriculture have been included in the education system at higher levels which will be helpful in transferring technology at a faster rate. Training the students in the areas of Floriculture providing opportunities for wage employment and self employment in urban and rural areas. Nagaland is recognized as a horticulture state. The varied climatic condition, topography and soil health are the natural potential strength of the state for successful cultivation of different flowers. The increasing production of flowers in green houses is a positive indication of the improving export potential of horticultural produce.

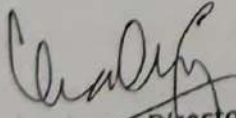
Hence the course of Floriculture as a subject is included in the syllabus with the objective to generate human resource capabilities for growing flowers scientifically so as to elevate the socio-economic conditions of Naga tribal students as well as farmers and creation of self and wage employment for the young generation.

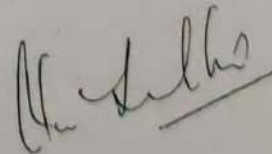

Deputy Director
State Horticulture Nursery
Dimapur : Nagaland



Objectives:

- To provide judicious mix of skills relating to a profession and appropriate content of General Education.
- To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.
- To provide flexibility to the students by means of pre-defined entry and multiple exit points.
- To integrate CBCS within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce.
- To provide vertical mobility to students coming out of 10+2 with vocational subjects.
- Familiarize students with the flower plants and their utilization.
- Develop skills in Green House technology for production of flowers.
- Adopt techniques of production of seedling and Nursery management.
- Study techniques of using fertilizers, growth regulators and irrigation for increasing productivity.
- Adopt techniques of improving soil condition reclamation of soil and balanced fertilizer management.
- Train man power acquiring skills of horticultural plant propagation.
- Train students from rural and urban area for having skills of gardening and aesthetic importance.


Deputy Director
State Horticulture Nursery
Dimapur : Nagaland



Detail course structures for CBCS & Certificate course on Floriculture

1. FL-101(Floriculture-I)*

Credit hours: 1T+2P =3

Theory (70)

Importance and scope of floriculture in Nagaland, Classification: according to environment and growth habit-tree, shrubs, climbers, herbs and their uses. Nursery, establishment, care and management of nursery, selection of site and layout, propagation of ornamental plants, lifting, potting, repotting, packaging of ornamental plants, Cultivation practices of important annuals, seasonal and perennials flowers and foliage plants. Principles and styles of flower arrangement, production of flowers for exhibition. Drying of flowers and dry flower arrangement.

Practical (30)

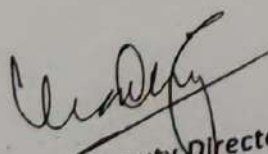
Identification of various annual, biennial, perennial and bulbous flower plants, herbs, shrubs, climbers, foliage plants. Identification of indoors and out door foliage plants, Identification of various garden tools and implements, practices of various propagation techniques, nursery bed preparation, potting and depotting, studies on various types of containers, Selection of flowers and foliage for styles of flower arrangements. Techniques of making bonsai and container gardens. Drying and preservation of cut flowers. Study of treatments for seeds, bulbs and cut flowers.

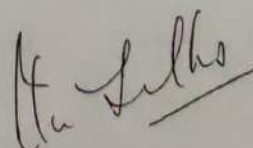
2. FL-102(Floriculture-II)

Credit hours: 1T+2P=3

Theory (70)

Scope of cut and loose flowers in national and global trade, Global Scenario of cut flower Production, area under cut flowers and production problems in India, Flower production – water and nutrient management, fertigation, weed management, rationing, training and pruning, disbudding, special horticultural practices, use of growth regulators, physiological disorders and


Deputy Director
State Horticulture Nursery
Dimapur : Nagaland



remedies, IPM and IDM, production for exhibition purposes. Cut flower standards and grades, harvest indices, harvesting techniques, post-harvest handling, Methods of delaying flower opening, Pre-cooling, pulsing, packing, Storage & transportation, marketing of Rose, chrysanthemum, carnation, gerbera, gladioli, tuberose, orchids, anthurium, lilliums, bird of paradise, heliconia, alstroemeria, dahlia marigold.

Practical (30)

Identification of various flowers, propagation techniques, mist chamber Operation, training and pruning techniques, practices in manuring, growth regulator application, pinching, disbudding, staking, harvesting techniques, post-harvest handling, , project preparation for regionally important cut flowers, visit to commercial cut flower units and case study.

3. FL-103(Landscape gardening)

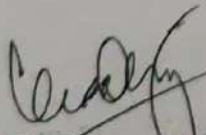
Credit hours: 1T+2P=3

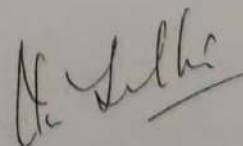
Theory (70)

Landscape designs, types of gardens: English, Mughal, Japanese, Persian, Spanish, Italian, Vanams, Buddha garden; Styles of garden: formal, informal and free style gardens. Urban landscaping, Landscaping for specific situations, institutions, industries, residents, hospitals, roadsides, traffic islands, dam sites, IT parks, corporate. Lawns, Establishment and maintenance of lawn, special types of gardens: vertical garden, roof garden, bog garden, sunken garden, rock garden, clock garden, colour wheels, temple garden, sacred groves. Bio-aesthetic planning, eco-tourism, theme parks, indoor gardening, therapeutic gardening

Practical (30)

Selection of ornamental plants, Draw and practices in preparing designs for home gardens, industrial gardens, institutional gardens, corporate, avenue planting, practices in planning and


Deputy Director
State Horticulture Nursery
Dimapur : Nagaland



planting of special types of gardens, bur lapping, lawn making, planting herbaceous and shrubbery borders, , visit to parks and botanical gardens.

4. FL-104(Protected Floriculture)

Credit hours: 1T+2P=3

Theory (70)

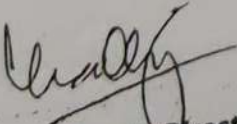
Protected cultivation of flowers, scope and constraints for protected cultivation, protected structures –Greenhouses, polyhouses, shade houses, rain shelters etc., Designing and erection of protected structures; Low cost/Medium cost/High cost structures – economics of cultivation; Location specific designs; Structural components; Suitable flower crops for protected cultivation.

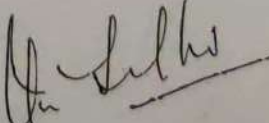
Environment control – management and manipulation of temperature, light, humidity, air and CO₂; Heating and cooling systems, ventilation, naturally ventilated greenhouses, fan and pad cooled greenhouses, light regulation. Containers and substrates, soil decontamination, layout of drip and fertigation system, water and nutrient management, weed management, physiological disorders, IPM and IDM. Crop regulation by chemical methods and special horticultural practices (pinching, disbudding, deshooting, deblössoming, etc.); Staking and netting, Photoperiod regulation. Harvest indices, harvesting techniques, post-harvest handling techniques, Precooling, sorting, grading, packing, storage, quality standards.

Practical (30)

Study of various protected structures, practices in design, layout and erection of different types of structures, practices in preparatory operations in existing structures, soil decontamination techniques, practices in environmental control systems, practices in drip and fertigation techniques, special horticultural practices, determination of harvest indices and harvesting methods, postharvest handling, packing methods, project preparation, visit to commercial greenhouses.

*FL 101(Floriculture-I) Choice based credit system (CBCS) for BA & B Com students
TO BE OFFERED IN SIXTH SEMESTER


Deputy Director
State Horticulture Nursery
Dimapur : Nagaland



Admission & Eligibility criteria

Duration: 6 months (one semester)

Eligibility: Pass in XII Standard (10+2). Eligibility criteria for admission to the certificate course in FLORICULTURE are:

- Applicants must have passed successfully the 10+2 level school examination from an institute that is recognized by national and state boards of education.
- Graduation is not compulsory but a graduate can also pursue the course after graduating in any field of study.

Fee Details: To be decided by college authority

Total Credit hours: 12 (Theory: 04 Practical: 08)

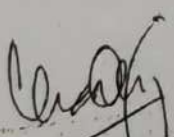
Examination System:

1st short test—Mid semester exam

2nd short test--Practical Examination

End (final) Semester examination

Total marks: 400(Theory: 280, internal assessment (practical):120)


Deputy Director
State Horticulture Nursery
Dimapur : Nagaland

