

Minimum Requirements for Model College of Horticulture with

Post Graduate programme (Optional)

Student intake/year : B.Sc. (Hort.) – 60 students

M.Sc. (Hort.) – 30 students

Ph.D. (Hort.) – 15 students

Land (Minimum) : 100 acres for UG

150 acres for UG + PG

A. Civil Structures:

I. College Main Building:

UG Class Rooms	- 4 (70 students capacity)
PG Class Rooms	- 6 (optional 30 capacity)
UG Labs	- 8 (30 capacity with faculty chambers and store room attached)
PG Labs	- 6(15 capacity – Optional)
Seminar halls	- 1 (150 capacity)
Examination hall	- 1 (150 capacity)
Computer laboratory	- 2 (30 capacity + 15 capacity for PG)
Central Instrumentation Room	- 1 (only for PG)
Deans Room and Office	- 1
Mini Meeting Room	- 1 (Attached to Dean Chamber)
Academic unit	- 1
Administration unit	- 1
Accounts unit	- 1
External Examination unit	- 1
Student Welfare unit	- 1
Days scholar lounge	- 2
Placement / Counseling cell	- 1
Language Lab	- 1
General Store	- 1

Post Harvest Technology lab requirements – (Lab-1 with three halls, separate building shed for processing, value addition packing and dispatch)

II. Library:

Staff room (Assistant Librarian)	- 1
Stack room (borrowing)	- 1
Reference Hall / Journal section	- 1
Book bank	- 1
E-resource centre	- 1
Photo-copying room	- 1
Reading Hall for students	- 1
Reading Hall for staff – (small)	- 1

III. Auditorium / Lecture theatre - 1 (optional 400-500 capacity)

IV. Hostels and Guest House:

UG Boys Hostels	- 1 (125 capacity, 3 students, 3 students per room) (Min. room size of 5mx4m)
UG Girls Hostel	- 1 (125 capacity, 3 students per room)
PG Boys Hostel	- 1 (40 capacity, double beds 40 for M.Sc.) (Min. room size of 3mx4m)
PG Girls Hostel	- 1 (40 capacity, double beds 40 for M.Sc.)
International hostel	- 1 (25 capacity, single bed room 25 for P.hd with cooking and bath attached)

Vehicle parking sheds (Two wheeler) one each attached to Boy's & Girl's hostel

V. Farm / Orchard Office:

- (a) Farm Manager Office
- (b) Seed processing + Storage unit
- © Farm store
- (d) Threshing yard
- (e) Workers rest shed
- (f) Maintenance cell / Estate Branch
- (g) Implement Shed
- (h) Tractor Shed

(j) Meteorological unit

(k) Farm fencing

Vi. Vehicle parking shed (four & two wheeler + 2 Buses)

Vi (a). Generator Shed

VII. Guest Houses 1 (2 VIP Suits + 8 Double bed rooms)

VIII. Farmers Training hostel } - 10 rooms with five beds each & attached bath room

Farm Women Hostel }

IX. Quarters

Dean	-1
Professor	-4 (Twin Quarters)
Assoc. Professor	-8 (G-2+F1-2) (GF-2+FF-2)
Assistant Professor	- 12 (G-2+F1-2) (GF-2+FF-2)
Non teaching (C group)	-24 (G-2+F1-2) (GF-2+FF-2)

B. Sports & Welfare

1. Four hundred meters tract with pavilion & Gallery

2. Courts – Volley ball - 2

Basket ball - 2

Kabbadi - 1

Kho-Kho - 1

Tennis - 1

3. Indoor games facilities

Table tennis - 2

Shuttle badminton - 2

Gymnasium - 2 (each for boy's and Girl's hostel)

4. Canteen - 1

5. Dispensary - 1

6. Stationery & Xerox point - 1

7. Bank & ATM - 1

8. Other utilities units - 1

C. Research cum Instructional Farm:

(Total area 40 ha / 100 Acres for UG additional 20 ha / 50 Acres for PG)

1. Crop museum - Tech Demo Plot unit
2. Botanical Garden - 4 ha
(Germplasm Centre)
3. Nursery - Poly houses (6), shade houses (6), Glass house(2),
Potting shed (2), Scion banks of important crops
4. Structures of various types –
Naturally ventilated – single span, multi span, medium cost, high cost, and
climate control structure.
5. Bio-agents production units (2)
6. IFS model (1 ha)
7. Experiential learning modules (4)

D. Irrigation, Water & Harvesting facilities:

- (a) Bore wells / Lift Irrigation
- (b) Farm pond and watershed unit
- © Over head tank
- (d) Ground water sump
- (e) Irrigation net work to farm
- (g) Roof water harvesting facility
- (h) Spent water treatment units, incinerator
- (i) Hydrological field lab
- (j) Drip / Sprinkler irrigation system

E. Farm Machinery

1. Tractors
2. Tractor drawn water tank, trailer and other tractor bound land preparation, spraying,
harvesting equipments, with a work ship.
3. Power tiller – 1, Mini Tractor – 1

F. Faculty requirement:

- | | |
|--|----------------------|
| 1. Teaching Faculties requirements for UG | (Given in Table I) |
| 2. Non Teaching staff requirement for UG | (Given in Table II) |
| 3. Teaching faculties requirements for UG & PG | (Given in Table III) |
| 4. Non Teaching staff requirements for UG & PG | (Given in Table IV) |

G. Laboratory equipments / requirements (Given in Table V)

H. Mobility:

- | | |
|-----------------------------|-----|
| a) Bus (60 seater) | - 1 |
| b) Minibus (40 seater) | - 1 |
| c) Car | - 1 |
| d) Jeep | - 1 |
| e) Multipurpose utility van | - 1 |
| f) Motor Cycle | - 2 |

I. General:

Campus shall be properly laid out depending on the location

- With proper approach roads to various structures with street light (solar) facility for important roads.
- All round the campus there shall be a proper fence or compound with tall growing trees to serve as wind break or shelter belts besides compound wall to ladies hostel.
- Around main building and hostel building proper landscape gardening shall be established
- All along important roads, different ornamental trees/useful trees shall be established and properly named.
- Each major Dept. should have Research block of 4 hectare-Germplasm unit, evaluation/trial block, Field laboratory etc.,
- Intercom network
- Solar lighting
- Solar water heating system
- Underground electricity supply system (24 hrs line)
- General security system

Table: 1: Faculty Requirement for Graduate Courses

Sl.No.	Disciplines	Faculty requirement
1	Fruit Science	1+1+1=3
2	Vegetable Science	1+1+1=3
3	FLA	1+0+1=2
4	Plantation Spices, Medicinal & Aromatics	1+1+1=3
5	PHT	1+0+1=2
6	Biotechnology & Crop Improvement	0+1+1=2
7	Horticultural Entomology	0+1+1=2
8	Horticultural Pathology	0+1+1=2
9	Natural Resource Management (including Soil Science & Agril. Chemistry, Crop physiology and Agronomy)	0+1+2=3
10	Horticulture Engineering	0+0+1=1
11	Forestry	Plantation teachers can offer Forestry course
12	Horticulture Extension	0+0+1=1
13	Economics	0+0+1=1
14	English	0+0+1=1
15	Plant Biochemistry	0+0+1=1
16	Microbiology	0+0+1=1
17	Computer Science	0+0+1=1
18	Physical Education	0+0+1=1
19	Statistics	0+0+1=1
20	Library Science	0+0+1=1
21	Seed Science Technology	0+0+1=1

Professor = 05

Associate Professor = 07

Assistant Professor = 21

Total = 33

Table – II: Non-Teaching Staff Requirement for Graduate Courses

Sl. No.	Non-teaching staff	Required
1	Assistant Registrar	01
2	Superintendent (Administration)	01
3	Asst. comptroller	01
4	Asst. Engineer (Civil)	01
5	Asst. Medical Officer	01
6	Junior Engineer (Electrical)	01
7	Lab Technician	01
8	Lab Assistant	08
9	Field Assistant	08
10	Shelf Assistant	02
11	Assistant Cum Computer Operator	06
12	Driver	04
13	Tractor Driver	02
14	Cook	03
15	Care Taker	02
16	Plumber	01
17	Electrician	01
18	Bus Helper	01
19	Sports Helper	01
20	Gardener	06
21	Janitor	02
22	Office Attender	06

23	Watchmen	06
24	Nurse (Female + Male)	02
	Total	68

**Table – III: Faculty Requirements for Graduate & Post
Graduate Courses (M.Sc. & Ph.D)**

Sl.No.	Disciplines	Faculty requirement
1	Fruit Science	1+1+3=5
2	Vegetable Science	1+1+3=5
3	FLA	1+1+3=5
4	Plantation Spices, Medicinal & Aromatics	1+1+3=5
5	PHT	1+1+3=5
6	Biotechnology & Crop Improvement	1+1+3=5
7	Horticultural Entomology	1+1+3=5
8	Horticultural Pathology	1+1+3=5
9	SS & AC	1+1+3=5
10	Agronomy (+ Meteorology)	0+1+1=2
11	Horticulture Engineering	0+1+1=2
12	Crop Physiology	0+1+1=2
13	Biochemistry	0+1+1=2
14	Microbiology	0+1+1=2
15	Statistics	0+0+2=2
16	Economics/ Agriculture Business Management	0+0+2=2
17	Extension	0+1+1=2
18	Physical Education	0+0+1=1
19	Computer Science	0+0+1=1
20	English	0+0+1=1
21	Library Science	0+0+1=1
22	Instrumentation Engineer	0+0+1=1
	Total	9+16+32=57

Professor = 09

Associate Professor = 16

Assistant Professor = 32

Total = 57

**Table – IV: Non-Teaching Staff Requirement for Graduate + Post Graduate
Courses**

Sl. No.	Non-teaching staff	Required
1	Assistant Registrar	01
2	Assistant Administrative Officer	01
3	Asst. comptroller	01
4	Superintendent (Accounts)	01
5	Asst. Engineer (Civil)	01
6	Junior Engineer (Electrical)	01
7	Asst. Medical Officer	01
8	Lab Technician	02
9	Lab Assistant	12
10	Field Assistant	12
11	Shelf Assistant	02
12	Assistant Cum Computer Operator	08
13	Driver	04
14	Tractor Driver	02
15	Cook	03
16	Care Taker	03
17	Plumber	01
18	Electrician	01
19	Bus Helper	01
20	Sports Helper	02
21	Gardener	08

22	Janitor	02
23	Office Attender	09
24	Watchmen	06
	Total	85

Table – V: Equipments for PG Centralized laboratory equipments

Sl. No	Particulars	Approx. Cost/Unit	Number	Total Cost
1	Weigh balance (0.001)	35000	2	70000
2	Weigh balance (0. 01)	16000	2	32000
3	Weigh balance (0. 1)	6000	2	12000
4	Weigh balance (60 kg)	18000	2	36000
5	Single distillation unit	25000	2	50000
6	Double distillation unit	95000	2	190000
7	pH meter	20000	2	40000
8	EC bridge	15000	2	30000
9	Digital refracto meter	20000	2	40000
10	Digital vernier callipers	15000	2	30000
11	Stereo zoom micro scope	65000	2	130000
12	Flourescent microscope	1000000	1	1000000
13	Hot air oven	30000	3	90000
14	Magnetic stirrer (5 liter)	10000	3	30000
15	Micro oven (25 liters)	25000	2	50000
16	Refregerator (320 liter)	28000	5	140000
17	Water bath with shaker (20 liter)	35000	3	105000
18	Orbital shatter (8 500 ml conical flask capacity)	95000	4	380000
19	Uv spectrophotometer	300000	2	600000
20	Refregerated centrifuge	400000	2	800000
21	Microtome	80000	1	80000
22	Vertical gel unit (DUAL UNIT max)	65000	3	195000
23	Power pack (small)	25000	3	75000
24	Hortizontal gel unit (medium)	35000	3	105000
25	Micro pipette (10µ l, 100 µ l, 200 µ l, 1000 µ l, 5000 µ l)	100000	3	300000

26	BOD incubators	95000	4	380000
27	Laminar air flow chamber	150000	2	300000
28	Deep freezer vertical (-20 degree, 275 liter)	150000	4	600000
29	Digital Thermometer and hygro meter	30000	2	60000
30	Liquid nitrogen container (7 liter)	40000	4	160000
31	Auto calve (vertical) 250 liter	75000	3	225000
32	Nitrogen distillation unit	150000	2	300000
33	Fiber estimation unit	150000	2	300000
34	Flame photo meter	100000	2	200000
35	Ultra pure water purification system	300000	2	600000
36	Thermocycler unit	500000	2	1000000
37	Gel documentation unit	500000	2	1000000
38	Air conditioner (2 ton)	65000	3	195000
39	Online UPS (10 volts)	55000	2	110000
40	Digital camera (14 mpix)	15000	2	30000
41	Vortex	6000	3	18000
42	Hot plate (5 liter)	15000	3	45000
43	Growth chamber	500000	2	1000000
44	SPAD	200000	2	400000
		Total		11533000

Equipment for UG Laboratory Equipments

Sl. No	Particulars	Approx. Cost/Unit	Number	Total Cost
1	Weigh balance (0.001)	35000	8	280000
2	Weigh balance (0. 01)	16000	8	128000
3	Weigh balance (0. 1)	6000	8	48000
4	Weigh balance (60 kg)	18000	2	36000
5	Single distillation unit	25000	6	150000
6	Double distillation unit	95000	2	190000
7	pH meter	20000	8	160000
8	EC bridge	15000	8	120000
9	Digital refracto meter	20000	3	60000
10	Digital vernier callipers	15000	2	30000
11	Stereo zoom micro scope	65000	7	455000
12	Compound microscope	25000	25	625000
13	Hot air oven	30000	10	300000
14	Magnetic stirrer (5 liter)	10000	8	80000
15	Micro oven (25 liters)	25000	8	200000
16	Refrigerator (320 liter)	28000	8	224000
17	Water bath with shaker (20 liter)	35000	8	280000
18	Orbital shatter (8 500 ml conical flask capacity)	95000	6	570000
19	Uv spectrophotometer	300000	2	600000
20	Refrigerated centrifuge	400000	3	1200000
21	Microtome	80000	1	80000
22	Vertical gel unit (DUAL UNIT max)	65000	2	130000
23	Power pack (small)	25000	2	50000
24	Horizontal gel unit (medium)	35000	2	70000
25	Micro pipette (10µ l, 100 µ l, 200 µ l, 1000 µ l, 5000 µ l)	100000	8	800000

26	BOD incubators	95000	9	855000
27	Laminar air flow chamber	150000	4	600000
28	Deep freezer vertical (-20 degree, 275 liter)	150000	8	1200000
29	Digital Thermometer and hygro meter	30000	8	240000
30	Liquid nitrogen container (7 liter)	40000	4	160000
31	Auto calve (vertical) 250 liter	75000	4	300000
32	Nitrogen distillation unit	150000	2	300000
33	Fiber estimation unit	150000	2	300000
34	Flame photo meter	100000	2	200000
35	Ultra pure water purification system	300000	2	600000
36	Thermo cycler unit	500000	1	500000
37	Gel documentation unit	500000	1	500000
38	Air conditioner (2 ton)	65000	8	520000
39	Online UPS (10 volts)	55000	8	440000
40	Digital camera (14 mpix)	15000	8	120000
41	Vortex	6000	8	48000
42	Hot plate (5 liter)	15000	8	120000
43	Growth chamber	120000	4	480000
44	Seed Germinator	50000	2	100000
45	Seed Analyzer	40000	1	40000
46	Seed Ex-ray Machines	2000000	1	2000000
47	Seed Coating Machine	15000	1	15000
48	Electrical Conductivity	50000	1	50000
		Total		18039000

