

**Government permission**

**PONDICHERRY UNIVERSITY**  
**NORMS FOR AFFILIATION**

**2006**

**These norms may be treated as the guidelines for the minimum requirements to be possessed by the College/Institutions for seeking affiliation with Pondicherry University.**

**COMMON BASIC CRITERIA FOR OBTAINING AFFILIATION**

**Management**

Government or a Society registered under the Societies 'Registration Act 1860 (21 of 1860) or a Trust with Trustees being appointed and vested with legal powers and duties and create a non-transferable Endowment Fund in the name of the Society or Trust as the case may be.

Should have obtained NOC from the respective State Government

**Statutory body approval**

- (i) Approval of respective statutory bodies like AICTE, MCI, NCTE should have been obtained.
- (ii) Wherever special status like 'Minorities' etc is claimed approval of the respective statutory body like "Minorities Commission" should have been obtained

**Endowment Creation**

The University may fix the quantum of endowment keeping in view the adequacy of the financial position of the college after taking into account the Government grant. The endowment should be created accordingly.

**Own Land**

The Society / Trust should own adequate land exclusively for the college. Documentary proof for ownership of lands exclusively earmarked for the college and Legal opinion from the Government pleader on the ownership of land and extent of coverage should be produced .

**Financial Stability**

Documents showing the financial viability of the college (details of budgeted revenue and expenses statement) should be produced

## SCIENCE COLLEGES

<b>Requirements</b>
<b><u>Land</u></b>
<b><u>Essential:</u></b> Each colleges should have a minimum of 5 acres of land (3-2 acres for construction of building including staff quarters and 2-3 acres for play fields)
<b><u>Endowment Creation</u></b>
<b><u>Essential:</u></b> 30,00,000/- (50% in Cash & 50% in property)
<b><u>Class Room/Lecture room</u></b>
<b><u>Essential:</u></b> Each class room should have a size determined by multiplying number of students (approved intake) with 1.2 sq.m. plus 20% additional space for table & chair for the teacher. For each programme in UG there should be three class rooms, one for 1 <sup>st</sup> year, second for IInd year and third for III year students. Each class room should have big enough black boards, preferably two blackboards. If there is only one, its size must be at least 1.5 X 2 m. There should be two fans per 10 students and there shall be enough tube lights in each class room. Each class room should have enough windows for good ventilation. There shall be at least a big enough room for faculty members. The size of the room should be determined by multiplying the number of faculty members with 2 sq.m.
<b><u>Desirable:</u></b> It is recommended that the staff room may be partitioned into cubicles of adequate sizes so that each faculty member has a cubicle and some privacy. A separate room should be provided for each HOD, if the department has a distinct identity.
<b><u>Laboratories Space</u></b>
<b><u>Essential:</u></b> The minimum requirements regarding Laboratory space, working space, batch-wise and class-wise strength etc.  <b>Chemistry :</b> The laboratory working space for <b>Chemistry</b> 'Practical' be as shown below : (1) 6 Sq.ft. per student table top area for B.Sc. Par-I and 8 Sq. ft. table top area for B.Sc. Part-II and III.

(2) Minimum floor area for a batch of 20 students should be about 500 Sq. ft.

**Physics** : The laboratory working space for **Physics** for different classes be as shown below :  
Laboratory working space per student.

(1) B.Sc. Part-I : 2.5 Sq. meters. (Table top area = 0.6 Sq. meters)

(2) B.Sc. Part-II : 3 Sq. meters. (Table top area = 0.6 Sq. meters)

(3) B.Sc. Part-III : 3 Sq. meters. (Table top area = 0.8 Sq. meters)

**Botany** : Laboratory working space for **Botany** be as under :

(1) B.Sc. Part-I : 0.557 Sq. meters (6 Sq. ft.). (Table top area and a distance of 1.219 meters (4 ft.).)

(2) B.Sc. Part-II and III : 0.743 Sq. meters (8 Sq. ft.). (Table top area & a distance of 1.219 meters (4 ft.) in row of tables 1.524 meters (5 ft.).)

**Zoology** : The laboratory working space in **Zoology** be as under :

0.762 meters X 0.762 meters (2 ½' X 2½') per student at B.Sc.Part-I & 0.762 meters X 1.066 meters ( 2 ½' X 3½') for the B.Sc. Part-II & III.

**Geography** : The laboratory working space and laboratory space in **Geography** be as under :  
Laboratory working space per student.

B.Sc. Part-I 2 Sq. meters.

B.Sc. Part-II 2 Sq. meters.

B.Sc. Part-III 2 Sq. meters.

Minimum floor area for a batch should be at least 55 Sq. meters (or 600 Sq. ft.)

**Geology** : Laboratory working space for **Geology** be as under :

1. B.Sc. Part-I : 0.557 Sq. meters (6 Sq.ft) table top area and distance of 1.219 meters (4 ft)

2. B.Sc. Part-II and III : 0.743 Sq. meters (8 Sq. ft.) table top area and distance of 1.219 meters (4 ft.) in row of tables.

**Microbiology** : The laboratory working space for **Microbiology** for different classes be as shown below :

Laboratory working space per student.

1. B.Sc. Part-I : 0.762 meters X 0.762 meters (2½' X 2½') per student.

2. B.Sc. Part-II and III : 0.762 meters X 1.061 meters. (2½' X 3½') per student.

**Psychology** : The laboratory working space for **Psychology** for different classes be as shown below :

Laboratory working space per student :

1. For B.Sc. Part-I, II & III and for B.A. Part-III 2.31 Sq. meters (25 Sq. ft.) area including a table per student, and a distance of (4 ft.) between every two students.

2. Laboratory space-Minimum floor area for a batch of 12 students should at least 500 ft. (or 45 Sq. meters)

3. There will not be more than twelve (12) students in a batch.

**Plant Protection :** The laboratory working space for **Plant Protection** for different classes be as shown below :

Laboratory working space per student :

1. B.Sc. Part-II and III : 0.743 Sq. meters (8 Sq. ft.) (Table top area and a distance of 1.219 meters (4 ft.) in row of tables.)
2. i) For B.Sc. II – Batch of 15 students  
ii) For B.Sc. III – Batch of 12 students

**Pollution :** The laboratory working space for **Pollution** for different classes be as shown below :

Laboratory working space per student :

1. B.Sc. Part-II and III : 0.743 Sq. meters (8 Sq. ft.) (Table top area and a distance of 1.524 meters (5 ft.) in row of table.)
2. i) For B.Sc. Part-II : Batch of 15 students  
ii) For B.Sc. Part-III : Batch of 12 students

The minimum requirements regarding laboratory space, working space, Batch-wise and Class-wise strength etc.

**Statistics :** The laboratory working space for “**Statistics**” be as shown below :

**B.Sc. (Part I, II and III) :**

0.557 Sq. meters (6 Sq. ft.) table top area and a Chair. Other facilities to include standard statistical tables, and Electronic Calculators.

**Electronics :** The laboratory working space per unit student for various classes in respect of the subject “**Electronics**” be as follows :

1. B.Sc. Part-I : 2.5 Sq. meters (Table top area : 0.6 Sq. meters)
2. B.Sc. Part-II : 2.5 Sq. meters (Table top area : 0.6 Sq. meters)
3. B.Sc. Part-III : 3.0 Sq. meters (Table top area : 0.8 Sq. meters)

**Bio-Chemistry :** The laboratory working space for “**Bio-Chemistry**” practical be as shown below :

1. 0.557 Sq. meters (6 Sq. ft.) table top area for B.Sc. Part-I and 0.743 Sq. meters (8 Sq. ft.) table top area for B.Sc. Part-II and III.
2. Minimum floor area for a batch of 20 students should be about 46.451 Sq. meters (500 Sq. ft.)

### Laboratories (Instruments/Equipments)

#### Essential:

**B.Sc. (Physics):** The list of essential laboratory equipments/instruments required are:

- 1) 10 meter wire potentiometer with 10 point sliding jockey standard/PICO make – 5 Nos.
- 2) 2V-battery substitute for potentiometer experiments I.C. regulated PICO make – 5 Nos.
- 3) 2V accumulator charged maintenance free type – 5 Nos.
- 4) GV accumulator, charged maintenance free type – 4 Nos.
- 5) Battery charger for the above cells – 1 No.
- 6) Rheostat 10 ohm, PICO/OSAW/Standard make – 6 Nos.
- 7) Rheostat 20 ohm, PICO/OSAW/Standard make – 6 Nos.
- 8) Rheostat 30 ohm, PICO/OSAW/Standard make – 6 Nos.
- 9) Plug key one way 2 terminals PICO/INCO – 10 Nos.

- 10) Tap key one way 2 terminals PICO/INCO – 6 Nos.
- 11) Daniel cell substitute 1.08 volt PICO make – 6 Nos.
- 12) Lechlanche cell substitute 1.54 volt PICO make – 6 Nos.
- 13) Sensitive moving coil galvanometer-student model-OSAW/MECO make 30-0-30 – 15 Nos.
- 14) Moving coil galvanometer, with internal shunt for initial adjustments – OSAW/MECO make – 6 Nos.
- 15) Moving coil volt meter D.C. OSAW/MECO make 0 to 1.5 volt – 6 Nos.
- 16) Moving coil volt meter D.C. OSAW/MECO make 0 to 10 volt – 6 Nos.
- 17) Moving coil volt meter D.C. OSAW/MECO make 0 to 15 volt – 8 Nos.
- 18) Moving coil ammeter D.C. OSAW/MECO make 0 to 1.5 ampere – 6 Nos.
- 19) Moving coil ammeter D.C. OSAW/MECO make 0 to 5 ampere – 6 Nos.
- 20) Standard resistance for potentiometer 1 bridge experiments, PICO make 1 ohm, 2 ohm, 4 ohm, 5 ohm etc. – Each 6 Nos.
- 21) Battery eliminator, IC regulated : 2,4,6,8,10 and 12 V with toggle switch – Inco/Pico make – 8 Nos.
- 22) Power supply – Variable from 1 to 15 V with pot and volt meter – Pico make – 6 Nos.
- 23) Post Office box – Dial type – PICO make – 4 Nos.
- 24) Hook-up wire for all electricity experiments aluminium 18, 20 and 22 SWcr each – 300 meter.
- 25) Temperature coefficient coil 5 to 10 ohm coil kept inside a boiling tube with terminals – 6 Nos.
- 26) Spectrometer – L.C. 1 minute INCO/OSAW make – 5 Nos.
- 27) Reading lens – Lens diameter 5 cm – F.L. – 10 cm – 15 Nos.
- 28) Reading lamp for spectrometer experiments – 6 Nos.
- 29) Sodium vapour lamp – 55 W with 55 W transformer enclosed in a wooden box with slits-philips lamp – 2 sets
- 30) Travelling microscopes with horizontal and vertical movements and scales L.C. 0.001 cm OSAW/INCO make – 6 Nos.
- 31) Wooden scale 1 meter mm and cm – 25 Nos.
- 32) Wooden scale  $\frac{1}{2}$  meter mm and cm – 20 Nos.
- 33) Diffraction grating 6000 lines / on Hilger 8 watt's type – 6 Nos.
- 34) Hollow prism – equilateral – single block (height 4 cm to 5 cm) – 6 Nos.
- 35) Sonometer (1 meter long) – 4 Nos.
- 36) Lee's disc apparatus complete set – 3 sets
- 37) Thermometers – 0 to 100 C –  $\frac{1}{2}$  divisions – 10 Nos.
- 38) Thermometers – 0 to 100 C – 0.2 divisions – 5 Nos.
- 39) Thermometers – 0 to 50 C – 0.2 divisions – 5 Nos.
- 40) Torsional pendulum with wire, disc etc. – 4 Nos.
- 41) Newton's law of cooling calorimeter – copper single piece – spherical – 6 Nos.
- 42) Compound pendulum – iron with wall bracket – 4 Nos.
- 43) Kater's pendulum – iron with wall bracket – 4 Nos.
- 44) Digital balance – capacity 3 kg – 1 No.
- 45) Digital balance sensitivity 0.01/0.001 gm. capacity : 250 gm. – 1 No.
- 46) Stop clock analog/digital – 10 Nos.
- 47) Stop watch analog/digital – 5 Nos.
- 48) mercury vapour lamp 80 W complete set – 2 sets

- 49) Field along the axis of a coil apparatus with 20, 30 and 50 turns PICO make – 4 Nos.
- 50) Commutator : Plug-in/rotating type – 4 terminals – 8 Nos.
- 51) Resistance box : 3 dial 0.1, units and tens PICO – 4 Nos.
- 52) Resistance box : 2 dial units and tens PICO – 4 Nos.
- 53) Resistance box : 4 dial, units, tens, hundreds and thousands PICO – 6 Nos.
- 54) Stoke's apparatus for viscosity experiments complete – 3 sets.

## II<sup>nd</sup> Year :

- 55) The number of resistance boxes in each type can be increased according to the requirements
  - 56) Static torsion apparatus – 50 cm long – INCO – 4 sets.
  - 57) Reading telescope with scale and stand INCO/OSAW – 6 Nos.
  - 58) D.P.D.T. switch – 6 Nos.
  - 59) Joule's calorimeter – complete set – 4 Nos.
  - 60) Carey Foster's bridge with sliding jockey ½ meter long – PICO – 4 Nos.
  - 61) Digital multimeter – MECO /Agronic make (for III year also) – 6 Nos.
  - 62) Deflection and vibration magnetometers with magnets – 4 Nos.
  - 63) Knife – edges for both I and II years. (Wooden/iron) – 12 Nos.
  - 64) Slotted weights with hanger, 50 gm / 500 gm etc for both I and II years – 10 sets.
  - 65) Spectrometer prisms, solid, crown glass : R.I. 1.5 – 6 Nos.
  - 66) Ballistic galvanometer (B.G.) with lamp and scale arrangement, INCO/OSAW 115/500 ohm – 4 sets.
  - 67) Audio frequency oscillator/Function generator – 2 MHz. systronics (optional for II year) – 2 Nos.
  - 68) Newton's ring microscope – complete set – OSAW/INCO – 3 Nos.
  - 69) Spectrometer prism, solid EDF – R.I. : 1.65 – 4 Nos.
  - 70) Small-angled prism : Angle : 15/20 – 4 Nos.
  - 71) Thermocouple cu/con or bi/sb – 4 Nos.
  - 72) Condenser boxes : two dial 0.1 and 0.01  $\mu$  F for both II and III years – 10 Nos.
  - 73) Mutual inductance coils, 300, 400 & 500 turns – 6 pairs
  - 74) Abbe's refracts meter (optional) – 1 No.
  - 75) Diode Laser (optional) – 1 No.
  - 76) Pair of optically plane glass plates for air-wedge experiments – 4 pairs
  - 77) Ultrasonic interferometer : Mittal make with 2 quartz crystals (optional) – 1 No.
  - 78) Charge discharge key for B.G. experiments – 6 Nos.
  - 79) Sequence key for B.G. experiments – 4 Nos.
  - 80) Digital conductivity bridge-Elics (optional) – 1 No.
- Electronic Instruments :
- 81) Frequency counter : systronics – 2 Nos.
  - 82) Digital multimeter with frequency measurement – 2 Nos.
  - 83) Cathode ray oscilloscope systronics /scientific 20 MHz – 2/3 Nos.
  - 84) Power supply single : 0 to 15 V variable, 1 ampere with pot, IC regulated with voltmeter PICO/sterling/omega – 8 Nos.
  - 85) Variac, 0 to 270 V, 4 ampere – 2 Nos.
  - 86) Transistors : BC 170 – 100 Nos.
  - 87) Junction diode IN 400 1 series – 100 Nos.

- 88) All required resistors – 50 each
  - 89) All required electrolytic capacitors – 20 each
  - 90) Zener diode –  $V_z$  3V to 8V – 50 Nos.
  - 91) Bread board with side attachments – 12 Nos.
  - 92) JFETS : BFW 10/11 – 50 Nos.
  - 93) IC 555 timer – 10 Nos.
  - 94) Gate : ICs all types – 10 each
  - 95) Op – Amp. Apparatus complete set – 2 sets
  - 96) 6-0-6 V step transformer – 6 Nos.
  - 97) 12-0-12 V step transformer – 10 Nos.
  - 98) Hook-up wire for making connections 20 and 22 SWG – each 200 meter
  - 99) Milli ammeter : 0 to 50 mA – 6 Nos.
  - 100) Milli ammeter : 0 to 100 mA – 6 Nos.
  - 101) Micro ammeter : 0 to 500  $\mu$ A – 6 Nos.
  - 102) D.C. Voltmeter 0 to 1.5 V – 4 Nos.
- \* Note: This list does not include minor accessories needed for all three years.

### **Furniture Requirements:**

- 1) All labs may be provided with built-in cupboards.
- 2) Sufficient number of wooden/steel almirah's are to be purchased.
- 3) Work table for general and electronic labs (Dimension : 2.4 X 1.1 X 0.9 m) – 12 Nos. (These tables may be provided with cupboards for storing the equipments).
- 4) Plastic/wooden stools for students (Dimension : 30X 30 X 70 cm) – 30 Nos. (These depend on the height of the work tables).
- 5) B.G. Tables : 1.2 X 1 X 0.9 m – 2 to 4 Nos.
- 6) All work tables should have concealed wiring with at least '8' number of 5A/6A plug points with a main-switch and fuse carrier for safety reasons.
- 7) Class rooms furniture should include individual chairs and tables for each student.
- 8) Spectrometer table in the dark room (optional) circular table with height 0.9 m and diameter about – 1.5 meter.

The laboratory working space for Physics for different classes be as shown below:

Laboratory working space per student.

- (1) B.Sc. Part-I : 2.5 sq. meters. (Table top area = 0.6 sq.meters)
- (2) B.Sc. part-II : 3 Sq. meters. (Table top area = 0.6 Sq.meters)
- (3) B.Sc. part-III : 3 Sq. meters. (Table top area = 0.8 Sq. meters)

### **B.Sc. (Chemistry)**

#### **Instruments:**

- 1) Electrical Centrifuge – 4 Nos.
- 2) Refrigerator – 1 No.
- 3) Hot air oven – 1 No.
- 4) Suction pump – 1 No.
- 5) Chemical balance – 16 Nos.

- 6) Electronic balance – 1 No.
- 7) Shaking Machine – 1 No.
- 8) Heating mantle – 2 Nos.
- 9) Electrical Bunsen – 16 Nos.
- 10) Distillation Unit – 1 No.
- 11) Conductivity bridge – 4 Nos.
- 12) Chromatography assembly – 2 sets.
- 13) Melting point apparatus – 2 Nos.
- 14) Drier – 2 Nos.
- 15) Weight box – 16 Nos.

**Furniture:**

- 1) Students table and chair – 30 x 3 sets.
- 2) Laboratory work tables with sink and tap connections at the sides and cupboards – 12 Nos.  
(87f x 47f x 3 ½ f + (height))
- 3) Balance tables or RCC platform for keeping balances – depending on the balance room size
- 4) Staff chairs & tables – 6 sets
- 5) Wooden side racks to keep reagents – 6 Nos. (with a gap of one feet between (67f x 47f) each planck)
- 6) Steel almirah with glass door of standard size – 5 Nos.

**B.Sc. (Plant Science)**

**Equipments (Major):**

- 1) Laminar air flow – 2 Nos. (One for biotech lab & another for Microbiology lab)
- 2) Auto clave – 2 big size refrigerator.
- 3) Centrifuge
- 4) Spectrophotometer with U.V. range with printer – 2 Nos.
- 5) Digital balance – 2 Nos.
- 6) Water bath with thermo control
- 7) Hot air oven – 2 Nos.
- 8) Gel electrophoresis appts. – 2 Nos.
- 9) Digital microscope with computer and printer
- 10) Shakes – 2 Nos.
- 11) Refrigerator with double door – 300 ltrs.
- 12) Microtone – 2 Nos.
- 13) PH digital meter – 3 Nos.
- 14) Chromatographic chamber – 3 Nos.
- 15) Seed germinating chamber
- 16) Humid chamber
- 17) Clinical centrifuge – 1 with 25,000 rpm.
- 18) OHP – 3 Nos.
- 19) Slide Projector
- 20) LCD Projector
- 21) Computer with printer and all other accessories – 3 Nos.



### **Minor Equipments :**

- 1) Compound Microscope (Olympus) – 36 Nos.
- 2) Dissection microscope – 36 Nos.
- 3) Binocular research microscope – 2 Nos.
- 4) Compound Microscope with camera
- 5) Digital camera with 10 pix – with computer attachment accessories
- 6) Petri dishes – 300 Nos.
- 7) Slide box with plain sliders – 200 Nos.
- 8) Coverslip box (blue star) – 200 Nos.
- 9) Drop bottle (Glass) – 90 Nos.
- 10) Wash bottle – 90 Nos.
- 11) Binocular with high resolution capacity – 1 No.
- 12) Double distillation unit – 1 No.
- 13) Single distillation unit – 1 No.
- 14) Boiling tube – 300 Nos.
- 15) Small test tube – 300 Nos.
- 16) Conical flask :-
  - (i) 250 ml – 100 Nos.; (ii) 500 ml – 100 Nos.; (iii) 1 ltr. – 25 Nos.
- 17) Beaker :-
  - (i) 25 ml – 50 Nos.; (ii) 100 ml – 50 Nos.; (iii) 250 ml – 50 Nos.; (iv) 500 ml – 50 Nos. and (v) 1 Ltr. – 25 Nos.
- 18) M (i) 10 ml – 10 Nos.; (ii) 25 ml – 10 Nos.; (iii) 50 ml – 10 Nos.; (iv) 100 ml – 10 Nos. and 1 ltr. – 10 Nos.
- 19) Gas stove with cylinder – 2 Nos.
- 20) Gas connection for Microbiology lab + tissue culture lab.
- 21) Glass bowl – 90 Nos.
- 22) Camel hair brush – 60 Nos.
- 23) Refluxing flask – 2 Nos.
- 24) Dissecting needle (stainless) – 10 doz.
  - a) Glass-work materials of algae, fungi, bryophytes, teridophytes and gymnosperms (in specimen tubes) – In required quantity.
  - b) Mounted specimens of plants belonging to aforesaid major groups (in sealed museum jars) – In required units.

### **i) Chemicals:**

Glycerin, saframine solution (aqueous) and formal dehyde (40%) – 3 ltrs. Each Green House – 1, with water and sprinkler facility; one pond with Motor pump; Mini Botanical garden – 1 (5,000 sq.mt.); Instrumentation room – 1 big size; Chart cabinet – 2 Nos.; Herbarium cabinet – 2 Nos.; Bio-visual hand – drawn – charts (depicting) – 50 Nos.

### **B.Sc.(Zoology)**

#### **Major Equipments :-**

- 1) Spectrophotometer / Calorimeter
- 2) Centrifuge – Table Top / High speed
- 3) Temperature controlled water bath

- 4) pH meter – Digital
- 5) Autoclave
- 6) Microtome with accessories
- 7) Paraffin Embedding bath
- 8) Warming plate
- 9) Single pan balances
- 10) Digital balances
- 11) Hot air oven
- 12) Incubator
- 13) Chromatography apparatus
- 14) Electrophoresis apparatus
- 15) Microscopes :-
  - i) Dissection Microscopes
  - ii) Compound Microscopes
  - iii) Binocular Microscopes
  - iv) Trinocular Microscopes
- 16) Distillation unit
- 17) Hot plates
- 18) Magnetic stirrer with hot plate
- 19) Tissue Homogenizer

**List of Laboratory items required :**

- 1) Computer
- 2) Refrigerator
- 3) Hemocytometer
- 4) Blood cell counter
- 5) Thermometers
- 6) Air blower
- 7) Chart cabinet
- 8) Slide cabinet
- 9) Burettes
- 10) Pipettes
- 11) Conical flasks
- 12) Measuring cylinders
- 13) Beakers
- 14) Test tubes
- 15) Test tube stands
- 16) Test tube racks
- 17) Test tube holders
- 18) Funnels
- 19) Petri dishes
- 20) Watch glasses
- 21) Dissection instruments
- 22) Dissection trays
- 23) Dissection boards
- 24) Bone cutter

- 25) Dissection hammer
- 26) Plain slides
- 27) Cavity slides
- 28) Blood grouping slides
- 29) Coverslips
- 30) Reagent bottles
- 31) Specimen bottles
- 32) Spirit lamps
- 33) Mortar and pestle
- 34) Coplin jar
- 35) Pipette bulb
- 36) Pipette washer
- 37) Tissue culture flask
- 38) Tissue culture plate
- 39) Chromatography cabinet
- 40) Magnifier
- 41) Stop watch
- 42) Ringer timer
- 43) Staining rack
- 44) Bio Visual Charts
- 45) preserved / stuffed specimens
- 46) Micro slides
- 47) Over Head Projector
- 48) Slide Projector

**Infrastructure facilities :**

- (i) Class Rooms : Three (I, II and II Yrs.); Approximate size : 30 feet x 30 feet, each
- (ii) Laboratory : Two (I, II and II Yrs.); Approximate size : 30 feet x 60 feet, each
- (iii) Store Room : One; Approximate size : 30 feet x 50 feet
- (iv) Instrumentation Room : One; Approximate size : 20 feet x 20 feet
- (v) Museum (with built-in racks) : One; Approximate size : 30 feet x 50 feet
- (vi) Staff Room : One; Approximate size : 20 feet x 20 feet

**Furniture required :**

- Student's table and chair : 90 Nos. (I, II and II Yrs.)
- Laboratory work tables : 32 Nos. (I, II and II Yrs.) size: 6 feet x 3 feet
- Staff chair and table : six sets
- Wooden / steel side racks to keep reagents : Four (approximate size 6 feet x 4 feet)
- Steel almirah (standard size) : Five
- Wooden / steel racks to keep museum specimens : Ten (approximate size 8 feet x 4 feet)

**Staff required :**

- Teaching staff : Five
- Store Keeper : One
- Lab Attender : One
- Sweeper : One

### **Library**

**Essential:**

In the beginning the library should have atleast 3000 books in different titles on each subject to be taught. It may be raised to 5000 within a period of three years. The library should have adequate number of reference books and journals. There should be a reading room and suitable space available for library staff with proper furniture. There should be multiple number of copies (atleast 5) of text books. Atleast 6 newspapers and 12 Magazines including Employment News should be subscribed.

### **Faculty (Student Teacher Ratio)**

**Essential:**

Principal – 1

Professor/HOD – 1 for each programme

Atleast there should be 4 Teachers for each programme in the First year, which should be increased to 5 in the Second year and 6 in the Third year. No teacher be appointed without fulfilling the qualifications laid down by the UGC from time to time

### **Computer Centre/Facility**

**Essential:**

Adequate Hardware and Soft ware facilities with Internet connections. Minimum 100 computers should be available in the first year itself.

### **Student Hostel**

**Desirable:**

If the opening of a new college is to cover the students in the surrounding area, adequate hostel facilities should be provided, hostel accommodation must also be according to norms prescribed by the UGC.

Boys : 25% of students

Girls : 50% of students

### **Essential Service**

Adequate facilities for essential services (Water, electricity and sewerage facilities) be provided in all the buildings

**Desirable:**

Permanent Electrical connection with 10 KVA.

Electrical Generator – 5 KVA

Potable water supply system – 120 Lt/day

### **Other amenities**

**Essential:**

(a) Playground

(b) Ramps be provided in the building for the Physically handicapped

(c) Separate common rooms for girls and boys be provided in co-educational colleges.

(d) There should be separate toilets for girls

(e) Adequate accommodation be provided for Principal's Office, Bursar's Office and for administrative staff.

- (f) There should be a staff room of a proper size
- (g) Certificate for fire safety
- (h) Canteen
- (i) Parking space : This will be provided as open or covered area minimum at the rate of 30 percent of the plinth area of the institute building
- (j) Adequate arrangements for meeting Emergency medical requirements should be available within the campus.

**Desirable:**

- (a) Auditorium
- (b) Seminar Hall
- (c) Staff Quarters for Teachers: Flat type accommodation for atleast 25% of the teachers along with certain common facilities. If the college is to be established in a remote area, higher percentage of teachers may be provided with accommodation in order to facilitate their participation in the corporate life of the college