

Infrastructure / Facilities

Department of Biotechnology has enough class rooms and most of them equipped with interactive board and projectors. Department also has a Seminar Hall floor area 150 square meters with seating capacity of 120 persons. The laboratories are equipped with the state of art facilities and are sufficient to conduct the experiments as per the curriculum. All the laboratories are well equipped with basic utilities like furniture, water sources, electricity etc along with advanced equipment as per the syllabus of Biotechnology program.

Department Library

Department of Biotechnology library aims to support the students and faculty by providing the most relevant and required books. The library has floor area 43 square meters with seating capacity of 20 persons.

Class rooms details:

SNo.	Venue Name	Room No	Size in Sqmt	Utilization
1	BT Block	BT217	79.2	Class room for 1st Year
2	BT Block	BT218	70.0	Class room for 2 nd Year
3	BT Block	BT107	79.3	Class room for 3rd Year
4	EI / BT Block	BT 405	24.7	Class room for PG Biotechnology 1st year
5	EI / BT Block	BT 404	41.2	Class room for PG Biotechnology 2nd year



Plant tissue culture laboratory



Concepts of Biology & Microbiology laboratory



Genetic Engineering and Applications and Animal tissue culture laboratory



Biochemistry/Downstream Processing laboratory



Research Project laboratories 1



Unit Operations/ Process Dynamics & Control Laboratory



Basics of Computer Application/ Bioinformatics laboratory



Go, Change the world



Centre of Excellence Computational Genomics

Funding Agencies



Department of
Biotechnology,
Government
of India



United Nations
Educational, Scientific and
Cultural Organization

राष्ट्रीय प्रौद्योगिकी
परिषद्
Regional Centre
for Biotechnology



wellcome
sanger
institute



Protein Data Bank in Europe



genetic innovation incubator



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Centre of excellence Computational Genomics Laboratory

Laboratory details at Department of Biotechnology

S. No.	Location	Name of the Laboratory	Room ID	Area in Sqmt	Name of the Important equipment
1	BT Block	Unit Operations/ Process Dynamics & Control Laboratory	BT006	95.633	Flask shaker – 2, Rotap Sieve shaker with sieve set, Sieve set for Rotap Sieve shaker, Leaf filter, Rotameter, Orifice meter, Venturimeter, Flow through Packed Bed, Flow through Conduit pipes, Centrifuge R-8C, Digital electronics Balance, Drop weight crusher, Double pipe heat exchanger, Shell & Tube heat exchanger, Gas liquid Mass transfer co-efficient, Diffusivity Cell, Vacuum distillation & simple distillation

					unit / Control of pressure in Bioprocess, Control of Temp. in Bioprocess, Control of flow in Bioprocess, Dynamics of first order system, Interacting system HP 280 G3 computer – 4, Fermentor – 100 lts.
2	BT Block	Basics of Computer Application/ Bioinformatics	BT 110	95.6	Computer (HP 280G3) - 30 Monitor, Monitor Dell, GCG Wisconsin software, Normal Server ML150, Schrodinger software, UPS 10 KVA, Battery, Battery Exide, HP computer -10, UPS – 7.5 KVA, Battery Open Source online Tools: FASTA, BLAST, EXPASY, NEBCUTTER, Standalone tools: Phylip, Quantum, Rasmol, Autodock / Computer (15 Nos.), Omics Box Software, Schrodinger software, UPS online – 5 KVA, Battery, Laptop –HP, D-link wire less access point, Jack panel 24 port, Switch 24 copper, CAT 6 fully loaded jack panel
3	BT Block	Biophysics & Instrumentation , Concepts of Biology & Microbiology	BT223	134	Autoclave, Autoclave Single drum, Anaerobic Culture Jar, Laminar air flow - vertical, Binocular microscope Lynx – 5, Binocular microscope Lynx – 2, Monocular microscope – 10, Dissection microscope – 3 Microscope for imaging sample, Digital electronics Balance, Digital colony counter-2 No, Microcontroller based Visiscan Spectrophotometer, Digital pH meter, Microwave oven – 2, Inverted tissue culture microscope, Trinocular stereo zoom microscope, Fluorescent microscope, Hot Air oven, Water bath (serological), Bacteriological Incubator, Bacteriological Incubator, Digital electronics Balance, Fume cupboard (4x2x2 ft), Refrigerator / Water bath (serological) – 2, BOD Incubator,\nRefrigerator, Ultra sonic water bath, Digital conductivity meter – 2, Turbidometer – 5, Magnetic stirrer with hot plate – 2, Magnetic stirrer with hot plate, Heating mantle – 500 ml
4	BT Block	Biochemistry/Downstream Processing , Microbial Biotechnology	BT221	95	Microprocessor based Flame Photometer, UV VIS spectrophotometer, Photo electric colorimeter – 5, Digital pH meter,

					Refrigerator, Water bath (concentric rings) – 4, Clinical table top centrifuge – 2, Digital electronics Balance – 2, Magnetic stirrer with hot plate, Heating Mantle 4x500ml, Deep freezer -40 Deg C, COD digestion unit, Bacteriological Incubator, Hot Air oven, Deep Freezer – Blur star (SSMRV), Magnetic stirrer with hot plate, Research Centrifuge (Remi), Microcentrifuge (Himedia), / Magnetic stirrer with hot plate, Vortex – 2, Walk in cooler, Microwave oven -28lts, Fraction collector & peristaltic pump, High speed centrifuge, Microplate reader, Cooling centrifuge / Orbital shaking incubator -3Nos, Soxhlet extraction unit, Tangential flow filtration unit, Dead end filtration unit, Ultra pure water system, Mixed flow reactor analysis, RTD mixed flow reactor, RTD in plug flow reactor
5	BT Block	Plant and Animal Biotechnology	BT 226	83.0	Stereozoom trinocular microscope, U V Vis Spectrophotometer, Deep freezer -86 deg C, Laminar Air Flow, Refrigerated orbital shaking incubator , Orbital Shaking incubator (Orbitek), CO2 Incubator, Green House, Quartz double distillation unit, Hybridization Oven, Tissue culture rack, Tissue culture rack, Tissue culture rack, Digital electronics Balance, Refrigerator, Autoclave, Autoclave Single drum, Laminar air flow- horizontal, Laminar air flow horizontal
6	BT Block	Genetic Engineering and Applications	BT 225 A B & C	56.431	Gel Documentation system (alpha), Gel Documentation system (Biorad), Centrifuge Spinwin MC-01, Centrifuge Spinwin MC-02, Cooling centrifuge, Electrophoresis unit – Vertical, Electrophoresis Unit–Horizontal, Electrophoresis Unit–Horizontal – 2, Electrophoresis Unit–Horizontal – 2, Electrophoresis Unit–Horizontal – 2, Green view electrophoresis unit, Mini dual electrophoresis unit, Mini dual electrophoresis unit – 2, Mini dual electrophoresis unit – 2, Mini dual electrophoresis unit – 2, N2 Can IR-3, N2 Can IR-20, N2 Can IR-30, Dry Bath – 2, Power pack electrophoresis, Test tube rotator

					<p>– Rotospin, Ice Flaker, Magnetic stirrer with hot plate – 2, Thermal Cycler (PCR), Rocky max (Gel rocker), Cyclomixer, Vortex, Vortex, UV transilluninator, White light transilluninator, Ultrapure water bath, Micro pH meter – 2</p>
7	IDRC Block	Centre of excellence Computational Genomics Lab	BT 301/312	48.1	<p>Acer Veriton M200 (7 Nos.), Power Edge RT30, Dell Power Edge Ser T30, Synology work station, Schrodinger Software (25 token), UPS 5 KVA with battery</p> <p>Server - 2 Nos.</p> <ul style="list-style-type: none"> ➤ Power Edge RT30, Server 3.5” chassis with upto 8.35” / 2.5” solid state or Hard Drives. ➤ Dell power Edge T30 server intel B3-1225 V5 with 16GB RAM and 1TB SATA HD. <p>Access to</p> <p>2 x Intel Xeon E5-2620v3, (15MB Cache, 2.4 Ghz, 7.2GT/s Intel QPI), 6 cores, 12 Threads. 32GB RAM ECC Reg. 8GB x 4 RAM modules. Total 16 DIMM slots, Max 768.0 GB RAM, 1 x 2.0 TB SATA HDD, DVD-RW, 18.5” LED Monitor, Integrated 2 x Intel Gigabit Ethernet Controller. 104 Keyboard, Mouse NVIDIA TESLA K-40 GPU NVIDIA TITAN –X PASCAL</p> <p>2 x Intel Xeon Bronze 3106 CPU @ 1.70 GHz (8 cores) 11 MB L3 Cache, 512 GB RAM , 1 x 256 GB SSD , 1 x 1.0 TB SATA HDD, DVD-RW , 18.5” LED Monitor, Integrated 2 x Intel Gigabit Ethernet Controller, Keyboard, Mouse , NVIDIA Quadro P 1000 4GB</p> <p>80000610 Work Station, Processor. Intel Core 10900 2.8 Hz 10C 65 W ,Memory 64 GB (2x 32GB) DDR4 PCIe NVMe Solid state Drives, Graphics</p> <p>VM Hardware, CPU 22MHz, 40 CPU(s),120 GB, 1 GB memory active,2TB(Thick Provision Lazy Zeroed,)</p> <p>2 X Intel Xeon –Gold 5118 (2.3GHz/12-</p>

				<p>Core/105W), Processor .Intel C622 Chipset, 128GB (4 x 32GB) DDR4 2666DIMM ECC Registered Memory,. 4 X 1TB SATA3 OPAL SSD Hard Drives, Blue Ray Wirter, Dual Port Integrated Gigabit Ethernet, X710-DA2, 10Gbe SFP, Dual Port NIC, Single Mode LC TO LC 10Mtr Patch Cord -1, NVIDIA QUADRO GV100 32GB , INTEL 7260 AC WiFi, 145W TW C621 1400 W 92%, 10G Single mode SFP, Module 2 Nos LENOVO Think vision TE-24-10 23.8 Inch wide FHD in Plane Switching Monitor, Virtual Reality (HTC VIVE Product for virtual reality) Headset 2 face cushions, 1 nose rest, 2 wireless controllers, 2 base stations, 3-in-1 cable, Link box, Earbuds, Cables, chargers and accessories, with tripod stand for 2 base stations</p> <p>GPU BASED COMPUTE NODE , INTEL XEON E5-2670V2 PROCESSOR*2, INTEL 2U SERVER PLAT FORM R2308GZ4GS9, 8GB DDR3 ECC REG. RAM 1866MHZ*10 = 80 GB ,500GB SATA ENTERPRISE 7200RPM, NVIDIA TESLA K20 GPGPU ADAPTER*2, DUAL GIGABIT NIC PORTS*2 MANAGEMENT NODE, INTEL XEON E5-2670V2 PROCESSOR*2, INTEL SERVER MOTHERBOARD S2600CP2,8GB DDR3 ECC REG.RAM 1600MHZ *5 = 40 GB, 500GB SATA ENTERPRISE 7200RPM*4 = 2TB, DUAL GIGABIT NIC PORTS, DVD-RW DRIVE STORAGE SYSTEM ,INTEL XEON E5-2670V2 PROCESSOR*2, INTEL SERVER MB S2600CP2, 8GB DDR3 ECC REG. RAM 1866MHZ*6 = 48 GB,500GB SATA ENTERPRISE 7200RPM*2 = 1 TB, 2TB NEARLINE SAS 3.5" 7200 RPM (RAID 6) WITH HOT SPARE AND 10% SNAPSHOT RESERVE *14=28TB CPU BASED COMPUTE NODE , INTEL XEON E5-2670V2 PROCESSOR * 2, INTEL SERVER MOTHERBOARD S2600CP2, 8GB DDR3 ECC REG. RAM 1600MHZ*5 = 40 GB, 500GB SATA ENTERPRISE 7200RPM, DUAL GIGABIT NIC PORTS</p>
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					<p>40Gpbs dual Port QDR Infiniband True Scale PCI-e single rail based 4U 16 hot swap bays rack mount enclosure with 800W redundant hot-swappable power supply units CentOS 6 64 bit Linux Cluster Communication System: 1 No. 36-port Intel Truescale infiniband switch 4x40Gbps QDR Other Items: 1 Lot Gigabit Switch: 24 - Port 10/100/1000 Ethernet Switch Managed Switch, Low-Latency, Rack Mountable Make: Cisco/Netgear/Zyxel/HP 1U KVM Console with: TFT Display Keyboard, trackpad, necessary cables and power adapters 42U Closed Cyber Rack: MS Steel Rack with 600mm width x 1000mm depth x 42U Height, Front MS Door with perforations Back MS Door with perforations, Side MS Panels with perforations, PDU with sufficient sockets and with heavy duty cable, 4 wheels (2 with brakes), 4 lavellers All Types of cables connectors accessories etc. as required OpenSource/FSF/GNU: Basic OS- Cent OS6 64 bit Linux Cluster Scheduler-Torque/OpenGrid Engine MPI Library-OpenMPI/MVAPICH2, Compilers-GNU C/C++, GNU Fortran, GNU/Open-source Software Open-source software on Linux platform for Genomics, Proteomics and structural Bioinformatics</p>
8	BT Block	Research Project lab 1	BT116	97.183	<p>High performance Liquid Chromatography (Waters) ➤ Waters 515 HPLC pump, 717 Auto sampler, Empower 2 personal software ADD-ON-SS, 2996 photodiode assay detector, 600 gradient mixer kit, Col 25cmx4.6mm. High performance Liquid Chromatography (Agilent) ➤ Agilent Technologies 1260 II Prep High Performance Liquid</p>

					<p>Chromatography System with Diode Array Detector and Evaporative Light Scattering Detector.</p> <p>Gas chromatography and Mass Spectroscopy Gas Chromatography (Varian Make), Measurable FWHM: 0.5 to 2.0 u, EI scan S/N: 1 pg octafluoronaphthalene m/z 272 S/N \geq 600 (helium gas), High-speed scan rate: 10,000 u/sec, Spray drier, Ultrasonic homogenizer, Real Time PCR, Bioanalyzer 2100 Electrophoresis Unit, Lyophilizer Bench top Freezer dryer, Atomic Absorption Chromatography, Microwave Digester / Extractor, Rosary evaporator, GCMS, Carry 60, Laminar air flow horizontal (HETP)</p>
9	BT Block	Research Project lab 2	BT112	62.38	<p>Fogger, Autoclave, Steribead, Hot air oven, Single distillation unit, Bottle washing machine, Refrigerator, Balance, pH Meter, Laminar Air Flow, Tissue Culture Rack, Positive Pressure Module, Deep Freezer -20 deg C</p>