

Faculty of Technology
B. Tech. Biotechnology
(R 2021) Semester – II

Course Code: BT3211 Course Title: Bioorganic Chemistry Laboratory		
Sl. No.	Description of Equipment	Required numbers (for batch of 30 students)
1	Hot Plate with Magnetic Stirrer	8
2	pH Meter	8
3	Water bath (10 L)	8
4	Weighing Balance	8
5	Colorimeter	8
6	Reflux condenser	8
7	Heating Mantle	8
8	Ice Flaking Machine	1
9	Hot Air Oven	1
10	Vortex	8
11	Thermometer	8
12	Polarimeter	1
13	Static Incubator	1
14	Air Condenser and CaCl ₂ guarded tube	8
15	Double surface condenser and CaCl ₂ guarded tube	8

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B. Tech. Biotechnology
(R 2021) Semester – III

BT3361 Biochemistry Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Autoclave	1
2.	Hot Air Oven	1
3.	Incubators	2
4.	Light Microscopes	4
5.	Incubator Shaker	1
6.	Colorimeter	2
7.	Laminar Flow Chamber	2
8.	Centrifuge	1
9.	Spectrophotometer	2
10.	Weighing Balance	2
11.	pH Meter	2
	<p>Glassware:</p> <p>Test tubes (atleast 10 per student)</p> <p>Beakers – 50 ml, 100 ml, 250 ml one each per student, 500 ml and 1000 ml atleast 5 per batch of 20 students</p> <p>Watch glasses one per student</p> <p>Petridishes as required, glass cuvettes as needed</p> <p>Burette – one per student</p> <p>Glass pipette – one each in 0.5 ml, 1 ml, 5 ml and 10 ml with suitable pipette aid.</p> <p>TLC plate as required for the experiment.</p> <p>Chemicals: glucose, fructose, galactose, maltose, starch, amino acids, DNA, RNA, lipids and commercial enzymes as required. Other chemicals as per the requirement of the standard protocol and commercial kit procured from the vendor followed/ utilised by the department</p>	

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B. Tech. Biotechnology

(R 2021) Semester – III

BT3362 Cell And Microbiology Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Autoclave	1
2.	Hot Air Oven	1
3.	Incubators	2
4.	Light Microscopes	4
5.	Incubator Shaker	1
6.	Colorimeter	2
7.	Laminar Flow Chamber	2
8.	Colony Counter	1
9.	Bunsen Burner	4
10.	Phase Contrast Microscope	2
	Glassware: Petridish, Test tubes, Microscopic slides, Inoculation , loop, Gas burner	

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(R 2021) Semester – IV

BT3411 Chemical Engineering Laboratory For Biotechnologists

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Colorimeter	2
2.	Filter leaf	1
3.	plate and frame filter press	1
4.	Orifice meter	1
5.	Venturimeter	1
6.	Rotameter	1
7.	packed column	1
8.	fluidized beds column	1
9.	Simple Distillation setup	1
10.	Steam distillation setup	1
11.	Centrifuge/Pump	1
12.	Heat Exchanger	2

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(R 2021) Semester – IV

BT3461 Analytical Instrumentation Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Colorimeter	5
2.	Spectrophotometer	2
3.	Weighing Balance	2
4.	pH Meter	2
5.	Chromatography Column	2

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(R 2021) Semester – V
BT3561 Immunology laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Elisa reader or strip Reader	1
2.	Microscopes	4
3	Microwave oven	1
4	Hot plate	4
5	Vortex mixer	4
6	Table top refrigerated Centrifuge	1
7	Fluorescent Microscope	1
8	Mini Spin Centrifuge	1
9	Water Purification Unit	1

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B. Tech. Biotechnology

(R 2021) Semester – V

BT3511 Molecular Biology And Genetic Engineering

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Micropipettes (0.5-2.5 μ l).	30 Nos
2.	Micropipettes (2-20 μ l)	30 Nos
3.	Micropipettes (20-200 μ l)	30 Nos
4.	Micropipettes (100-1000 μ l)	30 Nos
5.	Refrigerated centrifuge.	2 Nos
6.	Chemical fume hoods (for handling toxic solvents)	2 Nos
7.	Temperature controlled Incubator shaker	2 Nos
8.	Temperature controlled water bath	2 Nos
9.	Ice flake machine	2 Nos
10.	Agarose gel apparatus with power packs	15 Nos.
11.	Laminar Air flow (3 or 4 ft length)	2 Nos
12.	PCR machine (96/48 Wells)	2 Nos
13.	SDS-PAGE apparatus	30 Nos.
14.	Western transfer apparatus (Semi dry)	2 Nos
15.	Western transfer apparatus (wet)	30 Nos.
16.	Glasswares / Plasticwares/Chemicals/Media as required	

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(R 2021) Semester – VI
BT3611 Bioinformatics Lab

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	One computer for every student with internet and open source software tool to do the given experiment.	30

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B. Tech. Biotechnology
(R 2021) Semester – VI
BT3661 Bioprocess Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Autoclave	1
2.	Hot Air Oven	1
3.	Incubators	2
4.	Light Microscopes	4
5.	Temperature Controlled Incubator Shaker	1
6.	Colorimeter	2
7.	Laminar Flow Chamber	2
8.	Centrifuges	2
9.	Spectrophotometer	2
10.	Fermenter	1
11.	Weighing Balance	2
12.	Water Bath with Temperature Control	2
13.	Magnetic Stirrer	2
14.	Hot Plate	2
15.	Vortex Mixer	1
16.	Micropipette	2
17.	-20° deep freezer	1

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B. Tech. Biotechnology
(R 2021) Semester – VII
BT3761 Downstream Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Refrigerated Centrifuge	2
2.	Cross flow filtration set up	2
3.	FPLC or HPLC	1
4.	Sonicator or French press or Dynamill or Homogenizer	1
5.	Water Distiller	1
6.	Deep freezer	1
7.	Lyophilizer	1
8.	Refrigerator	1