




Infrastructure at Department of Instrumentation and Control

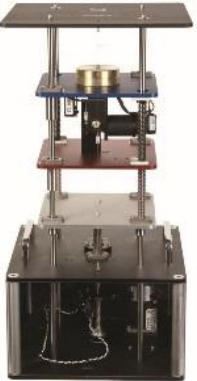


Infrastructure present in the department of instrumentation and control is described as follows:

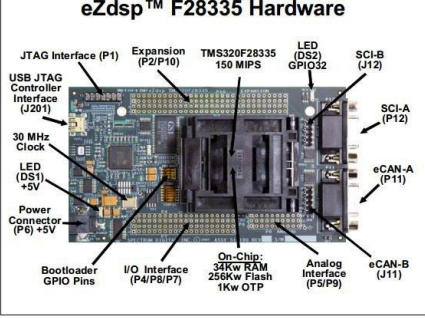

Rooms Description	Usage	Shared / Exclusive for UG	Capacity	Rooms Equipped With
Class Rooms				
Class Room No1	Class Room for S. Y. B. Tech Classes	Shared With Final Year B. Tech Elective Classes	42.70sq. m. (45)	White board/ black board, desks, and other essential amenities
Class Room No 2	Class Room for T. Y. B. Tech Classes	Shared with M. Tech Classes	66.00 sq. m. (50)	White board, black board, desks, audio visual aid, Internet, and other essential amenities
Seminar Hall	Class Room For Final Year B. Tech	Shared with Expert Lecture / Department Programs	66.00 sq. m. (50)	White Board, chairs, audio visual aid, Internet, and other essential amenities
Tutorial Rooms				
Tutorial Room	Tutorial Classes for S. Y. / T. Y. / Final Year	Shared with M. Tech Classes	42.70sq. m. (45)	White board/ black board and desks
Seminar Room				
Seminar Hall	Expert Lecture / Department Program	Class Room for Final Year B. Tech	66.00 sq. m. (50)	White Board, chairs, audio visual aid, Internet, and other essential amenities
Meeting Room				
Library and Meeting Room	Library and Meeting Room	Shared with M Tech	42.70 sq. m. (20)	White Board, Internet and other essential



				amenities
Faculty Rooms				
Faculty Rooms / Cabin(15)	Faculty sitting	Discussion/ Counselling with students	15 cabins	Desk Top / Laptop, Internet, white board, cupboard and other essential amenities
Laboratories (10)	Practical/ Research work	Shared with M Tech and PhD students	10 labs	Detailed List is given below


Analytical Laboratory	Cost (Rs in Lakhs)
 <ul style="list-style-type: none"> • UV- Visible Spectrophotometer (Chemito UV 2100), • Gas Chromatography (Chemito-GC-7610) • Trace Oxygen Analyzer, Conductivity Meter • Cold Press Hydraulic(KIMAYA Engineering) • Turbidity Meter(LABTRONICS LT 33), Furnace, Spirometer (Clement Clarke international) • 5 & ½ DMM interfaced with PC Trace Oxygen Analyzer 	1.0 1.8 3.9 1.5 4.0 0.5
Total	12.6


Hybrid Electronics Laboratory	Cost (Rs in Lakhs)
<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <ul style="list-style-type: none"> • Arbitrary waveform Generator • PLD Hardware and Software: Xilinx ISE webpack and Spartan 3 and Virtex 5 FPGA development boards, • Logic Analyzer and Mixed Signal Oscilloscope • Zed Board 	<p>1.5</p> <p>4.0</p> <p>4.0</p> <p>2.5</p> <hr/> <p>Total 12</p>



Advanced Control Laboratory	Cost (Rs in Lakhs)
<div style="display: flex; justify-content: space-around; align-items: center;">    </div> <ul style="list-style-type: none"> • Quanser Active suspension, Unmanned ground vehicle • 2 DOF Helicopter system • Magnetic levitation, Quanser QUBE • 2 DOF Flexible Link, Coupled tank systems, Antilock braking system, 3-D Gyroscope, 2DOF flexible joint • QET DC motor trainer kit, Rotary Servo Base Unit, etc. 	<p>7.0</p> <p>42.0</p> <p>1.0</p> <hr/> <p>Total 50</p>


Embedded Laboratory	Cost (Rs in Lakhs)
<p style="text-align: center;">eZdsp™ F28335 Hardware</p>   <ul style="list-style-type: none"> • Video Processing Development Setup • Tektronix Two Channel Digital Storage Oscilloscope • Free Scale FRDM KL eZ Board, LPC 2148 ARM 7 Board, GSM Module SIM 300, ULink 2 Emulator, etc. • Arbitrary Function Generator • 6 & ½ digit multimeter • BLDC control setup 	<p style="text-align: right;">4.5</p> <p style="text-align: right;">2.5</p> <p style="text-align: right;">3</p> <p style="text-align: right;">1.5</p> <p style="text-align: right;">1.0</p> <p style="text-align: right;">7.5</p> <p style="text-align: right;">Total 20</p>


Johnson Control Laboratory	Cost (Rs in Lakhs)
  <ul style="list-style-type: none"> • Dedicated Johnson Controller for Building Automation • AHU unit (Air Handling Unit) • Chilled water system unit • Comsol multi-physics software 	<p style="text-align: right;">32</p> <p style="text-align: right;">3.5</p> <p style="text-align: right;">2</p> <p style="text-align: right;">5</p> <p style="text-align: right;">Total 42.5</p>

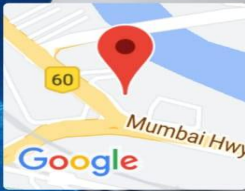
PLC Laboratory	Cost (Rs in Lakhs)
 <ul style="list-style-type: none"> • Control Logix 556003SE Controllers • I/O Cards, Ethernet cards, Control net cards • PLC Simulator • Rockwell Automation Toolkit 	40.0
Total	40.0

Pneumatics and Hydraulics Laboratory	Cost (Rs in Lakhs)
 <ul style="list-style-type: none"> • Festo Pneumatic and Hydraulics Setup and Components • Micro 850 PLC Panel • Remote Trigger Temperature System 	18.0 1.0 6.0
Total	25.0

Advanced Process Laboratory	Cost (Rs in Lakhs)
<div style="display: flex; justify-content: space-around;">   </div> <ul style="list-style-type: none"> • Pilot plants such as Boiler & Heat Exchanger, Evaporator, Spray Dryer, Bioreactor, Distillation Column, Batch Process & Bottle Filling, Quadruple Tank System. • Flow Measurement Skid, Level Measurement Skid, Temperature Measurement Skid, Pressure & Vacuum Measurement Skid, Torque & Vibrations Measurement Skid, Calibrator • Central Control Room 	50 20 10
Total	80

Digital Signal Processing Laboratory	Cost (Rs in Lakhs)
 <ul style="list-style-type: none"> • Altium Designer Custom Board • TI C 6000 and C2000 development boards with IDE • Tektronix Two Channel Digital Storage Oscilloscope • Tektronix function generator 	0.5 1.5 2.5 2.5
Total	7

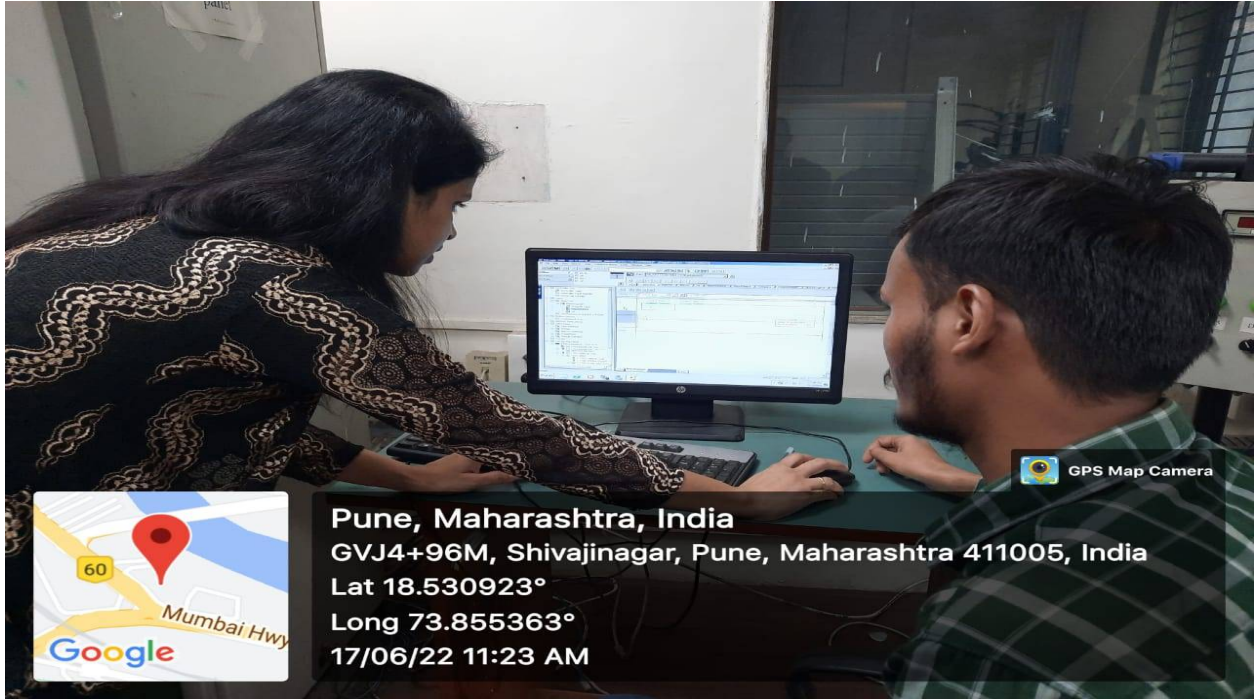
Biomedical Laboratory	Cost (Rs in Lakhs)
 <ul style="list-style-type: none"> <li data-bbox="267 598 1226 661">• Multiparamonitor and , Patient Simulator: Prosim 8 vital signs simulator, Electrical Safety Analyser, Spectrum Analyser <li data-bbox="267 661 1226 808">• NI ELVIS II board with QNET Myoeletric Trainer Kit , EMG Machine (Nihon Kodhen), National Instruments (NI) DAQ – USB, PXI Test and Measurement Set up, Embedded Vision System, Wireless sensor network nodes with gateways, Image Processing and Development System, Electrometer , Motion Control set up, Real Time Measurement and Control set up, etc. <li data-bbox="267 808 1226 871">• Software's – LabVIEW Professional Development Academic License Suite, MATLAB 	<p data-bbox="1372 598 1437 630">20.0</p> <p data-bbox="1372 682 1437 714">60.0</p> <p data-bbox="1372 871 1437 903">20.0</p>
Total	100.0



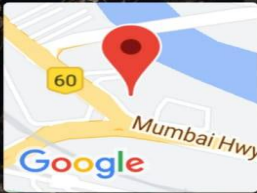
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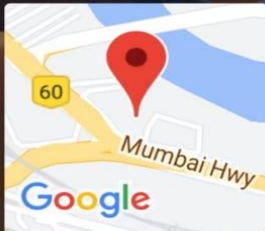
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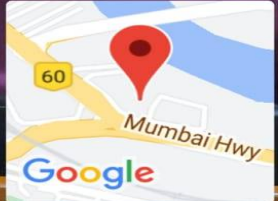
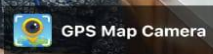
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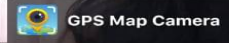
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Pharmacokinetics (PK) & pharmacodynamics (PD)

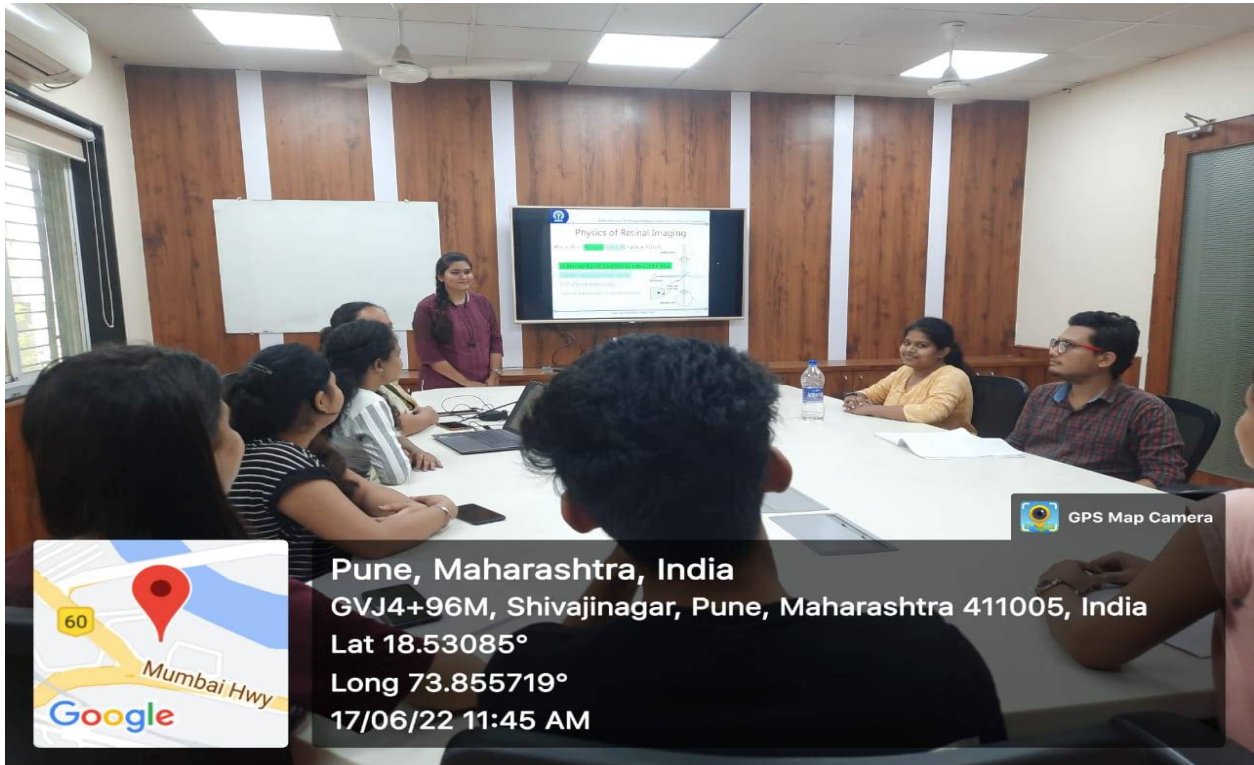
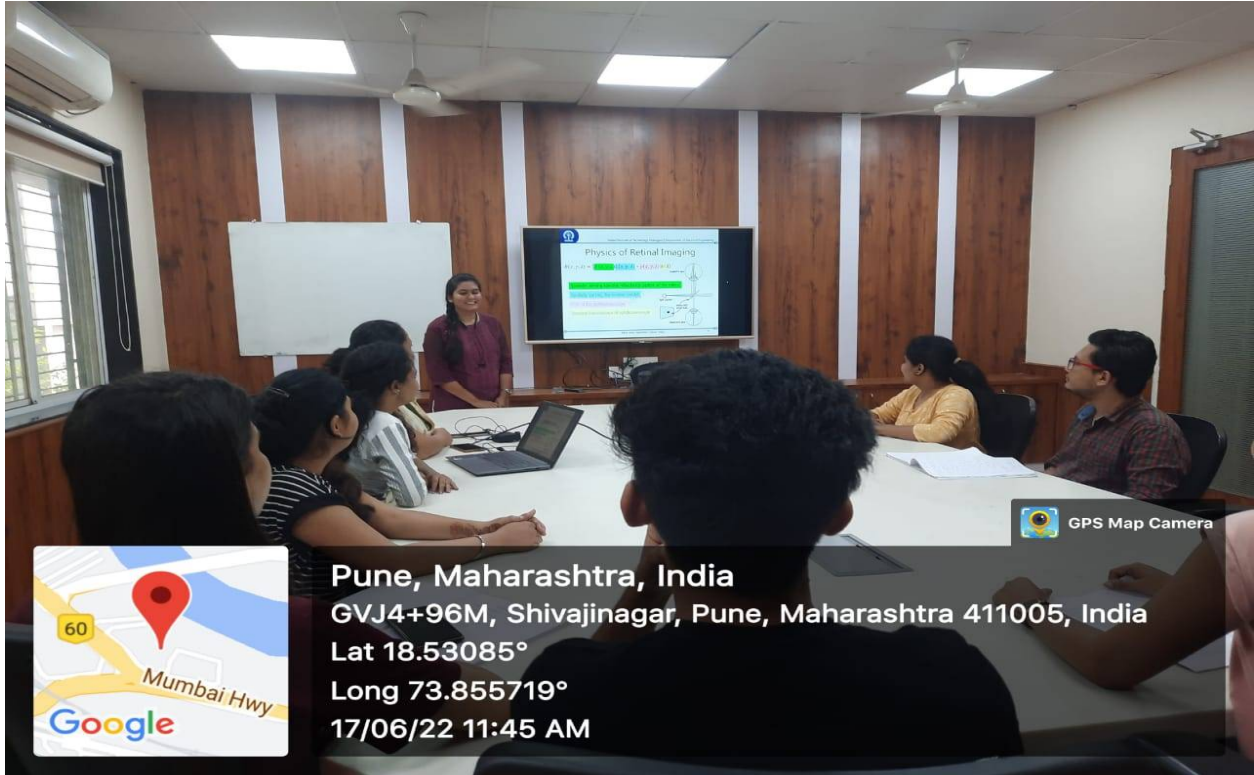
- PK - What the body does to the drug?
 - Absorption, distribution, metabolism, excretion (ADME)
- PD - What the drug does to the body?
 - Drug concentration at the site of action or in the plasma is related to a magnitude of effect



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Maharashtra 411005, India
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