

Chromatography Laboratory

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
Experiment and Training Equipment						
E-5	HPLC	F	1	UV-VIS Detector: 200 - 900 nm, Column Oven: Max. 80 deg	Basic operation and study for principle on 1st~2nd grade. Multipurpose measuring for samples upper 3rd grade. Measurement of drug density and mid-metabolic substance in body fluid after dozen.	Common, V-3, XV-7
E-6	Gas Chromatography	F	1	Column Oven: to 450 °C, Detector: FID, TCD, FDP, PC, Software	Basic operation and study for principle on 1st~2nd grade. Multipurpose measuring for samples upper 3rd grade. Analysis of substances which leads volatilizational induction or which is under 1000 molecule.	Common, V-5, VIII-9
E-7	LC Mass Spectroscopy	F	1	Mass Range: 10 - 1,500, Resolution: 2M, Sensitivity: S/N 50	Basic operation and study for principle on 1st~2nd grade. Multipurpose measuring for samples upper 3rd grade. Diagnosis of metabolic product and chain structure of peptide in blood / urine samples for drug monitoring.	Common, V-3, XV-6
E-8	GC Mass Spectroscopy	F	1	Mass Range: 10 to 900 AMU, Resolution: 2M, Sensitivity: S/N 60	Basic operation and study for principle on 1st~2nd grade. Multipurpose measuring for samples upper 3rd grade. diagnosis of small molecule compound resisting heat or structure of inherently metabolism disorder.	Common, V-3, XV-6
E-9	Double Beam Spec.	A	1	Wave Length 190 - 900nm, Resolution: 0.3 nm, Photometry System: Double Beam Optics	Basic operation and study for principle on 1st~2nd grade. measurement of enzyme activation and mass of unknown sample as basic chemical analysis.	Common, V-6, XII-6
E-44	FT - IR	F	1	Interferometer: Michelson type, Wave range 7,000 cm ⁻¹ to 300 cm ⁻¹	Basic operation and study for principle on 1st~2nd grade. Multipurpose measuring for samples upper 3rd grade. analysis of molecule structure of compound	Common, V-12, VIII-8, XII-6
E-48a	Analytical Balance Sensitivity - Five D.P	B	2	Max. capacity : 200g, Readability : 0.1mg, Canopy	Measurement of micro dry chemistry and reagent for making buffer	Basic
E-48b	Analytical Balance Sensitivity - Four D.P	A	1	Max. capacity : 400g, Readability : 0.001g, Canopy	Measurement of dry chemistry and reagent for making buffer	Basic
E-49	Heating- Cooling Circulator	B	2	Temperature control range : -20 to +40°C, Circulating Volume: 15 liters/min	Rapid cooling of reagent and control temperature	Basic
E-50	Centrifuge - Low Speed Bench Top	A	1	Max. speed : 5,500 rpm(3,000 xg) , Rotor Angle	Separation of sample(blood, urine)	Basic
E-51	Distillator	F	1	Processing: Ion-Exchange - Distillation, Capacity: 4 liters/hr.	Distillation water for preparation of reagent	Basic
E-52	Sonicator	A	1	Desktop type Ultrasonic Cleaner, Frequency: 20 to 45 Hz, Tank Capacity: 3 liters	Cleaning and sanitation for glass, metal equipment by ultra sound wave	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +5 ~ 90°C, Bath Capacity: 15 liter	Activation of shaking samples under controlled temperature water	Basic
E-78b	Super Critical Fluid Extractor Unit	A	1	Bench Type, Sample Mass : 1 g, Pump Pressure : 7,500 psi	Basic operation and study for principle on 1st ~ 2nd grade. Multipurpose measuring for samples upper 3rd grade. analysis of agriculture, soil, vitamins	Common, V-3, XV-6
E-92	Bunsen Burner	B	2	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-106	Fume- Hood	B	2	Air volume : 20m ³ /min, Dimension : Approx. 1,500(W) x 800(D) x 2,300(H)mm, Material: Chemical Register	Ventilation of poison gas by negative pressure	Basic
E-115	Refrigerator (Home Type)	A	1	200 L, 3 Doors, Home Use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	A	1	Chemical and solvent proof painting, Size: 850×400×800(H)mm	Preservation of reagent	Basic
E-121	pH Meter	A	1	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14 (Resolution 0.01pH)	pH level measurement for preparation of reagent and solution	Basic
E-135	Magnetic Spectroscopy	F	1	60 MHz, Laboratory use, Magnetic Field Homogeneity, Resolution :0.4 Hz	Basic operation and study for principle on 1st ~ 2nd grade. Multipurpose measuring for samples upper 3rd grade. structural analysis of organic compound by magnetic resonance	Common, II-5, V-6, XV-6
E-213	Stop Watch (Interruption Type)	A	1	Analogue type, 1 min. / around, interruption	Measurement of reaction time	Basic
E-287	Oven	A	1	Forced air-circulation type, Working temperature : ~ 250°C, Capacity : 10 liters	Sterilisation by dry heating for metal, glass, ceramic ware and dry chemistry	Basic
E-290	Micro Centrifuge	A	1	Table top, Max. speed :13,000 rpm	Separation and extraction for small volume by middle speed centrifugation	Basic
E-353	Mechanical Stirrer	B	2	Speed: Max. 1,200 rpm, Stand, Blade and Paddle	Dissolution and mixing of solid body	Basic
E-356	Titration	A	1	Measuring method : Volume method, Electrode probe, Measuring range : ~ 500mg	Titration of liquid sample	Basic
E-389	Pipette Set	B	2	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic

Chemistry

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-3	Electronic Projector	F	1	Portable Type, Zoom Lens, Screen Coverage 30 - 200"	Visual efficiency for teaching by video tape	Basic
A-4	Over- Head Projector	A	2	Aperture Size : A4, Projection Material: Transparency, Projection Lamp : Halogen	Visual efficiency for teaching by OHP	Basic
A-5	Screen (for Projector)	A	2	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x 1,800mm	Screens for projectors	Basic
A-6	Slides Projector	A	2	Circular Tray Type, Slide Size: 2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Basic
Experiment and Training Equipment						
E-3	Beta Counter	F	1	32,000 Channel Analyzer, Printer, Monitor	Basic operation and study for principle on 1st ~ 2nd grade. Multipurpose measuring for marked hormone protein upper 3rd grade.	Common, II-2, 5
E-9	Double Beam Spec.	A	2	Wave Length 190 - 900nm (Resolution: 1 nm), Photometric System: Double Beam Optics	Basic operation and qualitative analysis for samples	II-5
E-44	FT - IR	F	1	Interferometer: Michelson type, Wave range 7,000cm ⁻¹ to 300 cm ⁻¹ , Pyroelectric detector	Basic study of principle and operation for samples. Measurement for purity, chemical reaction process and structure.	II-5
E-48a	Analytical Balance Sensitivity - Five D.P	A	1	Max. capacity : 200g, Readability : 0.1mg, Canopy	Measurement of micro dry chemistry and reagent for making buffer	Basic
E-48b	Analytical Balance Sensitivity - Four D.P	A	4	Max. capacity : 400g, Readability : 0.001g, Canopy	Measurement of dry chemistry and reagent for making buffer	Basic
E-49	Heating- Cooling Circulator	C	5	Temperature control range : -20 to +40°C, Circulation Volume: 15 liters/min	Rapid cooling of reagent and control temperature	Basic
E-50	Centrifuge - Low Speed Bench Top	B	2	Max. speed : 5,500 rpm	Separation of sample(blood, urine)	Basic
E-51	Distillator (with Water Tank)	F	1	Processing: Ion-Exchange - Distillation, Production Volume: 4 liters/hr	Distillation water for preparation of reagent	Basic
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +5 ~ 90°C, Bath Capacity: 16 liter	Activation of shaking samples under controlled temperature water	Basic
E-61	Kjeldahl Apparatus	A	1	Temperature range: 100 ~ 400°C, Evapulating Rate: 40 ml/min, Test Tube: 20 pcs	Chemical analyse of nitrogen and protein	II-5
E-62	Gerber Machine	A	1	Fat Separate Centrifuge: 1,100 rpm, Gerber Test tubes	Extraction and analyse of lipids and protein of milk	II-5
E-63	Refractometer	C	5	Refractive index range : nD 1.3000 ~ 1.7000, Percentage range : 0 ~ 95.0%	Measurement of BRIX %	II-5
E-64	Polarometer	C	5	Measurable range : +180° > 0° > -180°, Light source: LED with interface filter	Measurement of polarising refraction in amino acid, lipid, glucose	II-5

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-65	Tensiometer	C	5	Magnetic Balance Type, Principal of measurement : 0 ~ 199.9 dyne/cm, Readability: 0.1	Measurement of tension in various substance	II-5
E-66	Digital Bomb Calorimeter	B	2	Measuring range : 1,000 to 8,000 cal , Accuracy: ± 20 cal	Analyse of caloric in various substance	II-6
E-67	Laboratory Steam Boiler	A	1	Capacity: 8,000g/hr., Evaporation Type: Electric Heater	Sterilisation for equipment parts	Basic
E-68	Rising Film Evaporator	A	1	Separating Temperature: 90°C, Evaporating Volume: 750 ml/h, Revolution: 140 rpm	Concentration of reagent / sample by filtration with thin layer film	Basic
E-92	Bunsen Burner	E	15	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-93	Biological Safety Cabinet	A	1	900x400x800, Sliding door with glass, Chemical proof	Preservation of samples under constant temperature and germ free	Basic
E-96	Incubator	A	1	Air jacket, heat conduction, Working temp. :Room temp. +5 ~ 70°C, Capacity: 70 liters	Cultivation and heating sample	Basic
E-98	Rotary Microtome	A	1	Section thickness :From 2 to 20 microns, Manual	Cutting paraffin tissue gradually in various thickness for microscope observation	Basic
E-106	Fume- Hood	B	2	Air volume : 20m ³ /min, Dimension : Approx.1,500(W) x 800(D) x 2,300(H)mm, Material: Chemical Resister	Ventilation of poison gas by negative pressured air	Basic
E-116	Safety Cabinet	B	2	Chemical and solvent proof painting, Size: 850×400× 800(H)mm	Preservation of reagent	Basic
E-121	pH Meter	C	4	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14 (Accuracy: 0.01pH)	pH level measurement for preparation of reagent and solution	II-10
E-281	Gamma Counter	F	1	Measuring Type: Halogen Tube, Measuring Range: 50,000 CPM	Measurement of natural gamma rays	II-5
E-282	Melting Point Apparatus	B	2	Temp. : Ambient to 360°C (Accuracy: 0.1 deg), 20 x Binocular	Study of melting point	II-7
E-287	Oven	A	1	Forced air-circulation type, Working temperature : to 250°C, Capacity: 10 liters	Sterilisation by dry heating for metal, glass, ceramic ware and dry chemistry	Basic
E-290	Micro Centrifuge	A	1	Max. speed :13,000 rpm (16,000 xg)	Separation and extraction for small volume by middle speed centrifugation	Basic
E-293	Calorimeter	B	2	Measuring Range: 1 MW/cm ² , Measuring: Power and Energy	Study of principle and measurement of calorimetry	II-7

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-294	Evaporator	C	6	Rotary evaporator, 20 ~ 180rpm, Evaporating Rate: 10 to 15 liters/min	Evaporating and distilling of solution to concentrate substance	Basic
E-295	Conductivity Meter	C	4	Measuring Range: 0 to 199.9 S/m, Datalogger	Measuring for conductivity level of water quality and salt density	II-11
E-334	Weighing Scale	A	1	0 to 100 kg, Flat Type	Measurement of reagents	Basic
E-347	Laminar Flow Hood	A	1	Working Area: 1,500 × 800 mm, Gate Height: 800 mm	Preparation under germ free space and plantation of bacteria	Basic
E-353	Mechanical Stirrer	D	8	Speed: Max. 1,200 rpm, Stand, Blade and Paddle	Dissolution and mixing of solid body	Basic
E-355	Double Jacketed Open Kettle with Electrical Heater	B	2	Capacity : 4 liter, Temp: RT to 75 deg	Activation for chemical reaction under constant temperature and humidity	Basic
E-356	Titration	A	1	Measuring method : Volume method, Electrode probe, Measuring range : ~ 500mg	Titration of liquid sample	Basic
E-357	Lovibond Tintometer	A	1	Tint Color: Cyan, Magenta, Yellow, Measuring: Transparency / Reflection	Basic study of tint / color analysis	II-12
E-358	Hydro Generation Autoclave	F	1	Steam Type(Max. 125 deg), Capacity : 70 liter	Sterilisation of equipment and container	Basic
E-370	Evaporator: Using Nitrogen Gas	F	1	Rotation Speed: 100 ~ 1,200 rpm, temperature: Max. 50°C	Concentration of samples with low temperature	II-16
E-377	Hot Plate with Magnetic Stirrer	C	5	Max. Temp: 400°C, Revolution 1,300 rpm, Plate Size: 130x130 mm	Dissolution and mixing of solution with heating	Basic
E-385	Osmometer: Freezing Point	B	2	Measuring Range: ~ 2,000 mill mol/kg	Measurement of osmotic pressure using sub-zero temperature	IV-1
E-386	Osmometer: Vapour Pressure Point	B	2	Automatic System, Sample, Range: 0 to 3,500 mol/kg	Measurement of osmotic pressure under evacuated condition	IV-1
E-388	Pipette Cleaning System	A	1	Capacity: ϕ 130×500mm, Water Volume: Max. 5 liter	Pipette cleaning by ultra sound wave	Basic
E-389	Pipette Set	C	4	Pyrex or equivalent, 0-500 μ l, 0-1,000 μ l, 0-5,000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-396	Selective Ion Electrodes: Na ⁺ , K ⁺ , NH ₄ ⁺ , NO ₃ ⁻ , CO ₃ ²⁻ , CO ₃ ⁻	C	6	Each electrode, Main Body	Measurement of pH degree in solution by each ion electrode	II-11
E-403	Thermometer	C	4	Range : -70 ~ 50°C	Measuring constant temperature in refrigerator, water bath	II-7
E-405	TLC System	A	1	Size: 200x200 mm, Thickness: Max. 1.4mm	Study of theory of thin layer chromatography	II-5
E-407	Conical Glass Tube	C	40	Capacity :10, 35, 50ml	Spits form for collecting sediment of urine	Basic
E-410	Vacuum Pump	A	3	Delivery Speed: 8 liter/min., Min. Pressure: 550 mmHg	Control of vacuum condition for experiment	Basic
E-411	Test Tube Mixer	A	1	Mixer for Test-tube, Revolution range : Max. 2,500rpm	For mixing test tube sample	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic

Physics

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-1a	Fixed Television Set	A	1	32", Multi System, Standing Rack: III, 200 x 800 x 700mm, Steel Frame with Holding Strap	Visual efficiency for teaching by video tape	Common
A-4	Over- Head Projector	A	1	Aperture Size: A4, Projection Distance: 1.5 - 3 m, Projection Material: Transparency, Projection Lamp: Halogen	Visual efficiency for teaching by OHP	Common
A-5	Screen (for Projector)	A	1	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x1,800 mm	Screen for projectors	Common
A-6	Slides Projector	A	1	Circular Tray Type, Slide Size: 2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Common
A-7	Decto- Phone	F	1	Voice Recorder/Player, Recording Media: Magnetic Tape, Recording Time: 1 hr	Voice records of seminar and anatomy experiment	Common
Experiment and Training Equipment						
E-57	Top Load Balance	B	2	Max. capacity : 4,000g(Readability: 0.1 g)	Measurement of reagent	Basic
E-79	Sound Level Meter	B	2	Audio signal: 2 kinds (A , B), Frequency: 20 to 20,000Hz	Measurement of Noise/Sound comparison	Basic
E-92	Bunsen Burner	C	5	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-125	Basic Current Balance	C	4	Current Balance Apparatus: Current (5 to 15 A), Multi-Meter	Measuring of magnetic field force	III-7
E-126	Induction by Means of a Variable Magnetic Field	C	4	Composition: registers, capacitors, diode, transistor and LED, potential meter, power source unit	Study of theory of induced voltage in variable magnet field	III-7
E-127	Optical Pumping	C	4	Composition: Photometer, He-Ne Laser, Laser alignment bench, Optic bench, Filter set, Lens set	Measurement and observation of the Zeeman transition	III-11
E-128	Free Fall	C	4	Composition: Timer , Release clamp unit, Receptor pad, Falling ball	Time measurement of free fall ball	III-1
E-129	One Dimensional Motions R truck on the Linear Air Truck	C	4	Composition: Meter track, Moving cart, Force sensor, Acceleration sensor	Measurement of initial velocity and accreted motion	III-1
E-130	KERR Effect	C	4	Composition: Computer set, Interface for PC, Sensor, Power Supply Unit	Study for Kerr effect	III-7

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-131	Torsion Pendulum	C	4	Chaos/Driven Harmonic set, Mechanical/Oscillator driver, Rod stand, Power supply	Study for chaotic oscillations	III-10
E-213	Stop Watch (Interruption Type)	B	2	Analogue type, 1 min./around, interruption	Measurement of reaction time	Basic
E-287	Oven	A	1	Forced air-circulation type, Working temperature :RT to 250°C, Capacity: 10 liters	Dry heating for sample	Basic
E-334	Weighing Scale	A	1	0 to 100 kg, Flat Type	Measurement of weight of samples	Basic

Biology

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-1b	Mobile TV	F	1	25", Multi System, Moveable Table: 11,200 x 800 x 700mm, Steel Frame with Caster and Holding Strap	Visual efficiency for teaching by video tape	Common
Experiment and Training Equipment						
E-4	Small Size Autoclave	F	1	Capacity: 15 liters, Automatic Operation, Sterilising Temp. 105 - 125°C	Sterilisation for equipment	Basic
E-49	Heating-Cooling Circulator	B	2	Temperature control range : -20 to +40°C, Circulating Rate : 15 liter/min	Rapid cooling of reagent and control temperature	Basic
E-50	Centrifuge - Low Speed Bench Top	B	2	Max. speed : 5,500 rpm (3,000xg)	Separation of sample to clear layer and precipitation	Basic
E-57	Top Load Balance	A	1	Max. capacity : 4,000g(Readability: 0.1g)	Measurement of reagent	Basic
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +5 ~ 90°C(Accuracy: 0.5 deg), Bath Capacity: 16 liter	Activation of shaking samples under controlled temperature water	Basic
E-92	Bunsen Burner	D	8	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-99	Sledge Type Microtome	A	1	From 0.5 to 12 micron , Manual	Cutting soft paraffin tissue in various thickness for microscope observation	I-2
E-101	Floating Out Bath for Paraffin Sections	A	1	Bath Volume: 9 liter, Setting temp. : 20 ~ 70°C	Flattening out wrinkled paraffin sections by heating	I-2
E-102	Tissue Processor	A	1	Station System, Glass beaker :10 pcs, Paraffin pot: 2 pcs, Controller	Automatic embedding in sealed container	I-2
E-108	Binocular Microscope for Students Plan	E	15	Total Magnification : 40X-1,000X, Biocular Microscope :Halogen illumination , Strage Case	Observation of slide samples	Common
E-110	Tissue Incubator	A	1	Forced Aeration Type, Working temp. :Room temp. +5 ~ 70°C, Capacity :70 liters	Cultivation of floating cell	I-2
E-114	Deep Freezer- Cabinet Type (Large)	A	1	- 80°C, Cabinet type, Volume: 450 liter	Long-term preservation of samples	Basic
E-115	Refrigerator (Home Type)	A	1	200 L, 3 Doors, Home use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	A	1	Chemical and solvent proof painting, Size: 850X400X800(H)mm	Preservation of reagent	Basic
E-118	Teaching Microscope with Television Video Output via Camera - 3CCD Plan Apochromat Objectives Plan	F	1	Total Magnification : 40X-1,000X, halogen light, Multi-purpose 3-CCD camera, Video system	Slide teaching assistant system for microscope with CCD camera	Common
E-120	Dissecting Microscope	C	4	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Microscope system with dissecting stage for experimental observation	Common
E-121	pH Meter	A	1	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14 (Accuracy: 0.01pH)	pH level measurement for preparation of reagent and solution	Basic
E-213	Stop Watch (Interruption Type)	B	4	Analogue type, 1 min. /around, interruption	Measurement of reaction time	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-278	High Speed Centrifuge	A	1	Max. speed :23,000 rpm (50,000 xg)	Separation and extraction of cell sample	I-5
E-287	Oven	A	1	Forced air-circulation type, Working temperature : to 250°C, Capacity: 10 liters	Sterilisation by dry heating for metal, glass, ceramic ware and dry chemistry	Basic
E-288	Orbital Shaker	A	1	Rotary Type, Shaking Stroke:30 mm (200 rpm)	Cultivation and sample stirring	Basic
E-290	Micro Centrifuge	A	1	Max. speed :13,000 rpm (16,000 xg)	Separation and extraction for small volume by middle speed centrifugation	I-5
E-296	Multi- Teaching Microscope	C	1	Total Magnification : 40X-1,000X, Halogen light, Multi-viewing : 4 Observers	Central control observation system for microscope	Common
E-318	Tissue Slicer (Chopper)	A	1	Thickness: 10 μ	Block cutting tissues for preparation for making slide specimen	I-2
E-321	Hematocrit Centrifuge	A	1	Speed 12,000 rpm, Rotor	Separation of small volume by capillary centrifugation	I-5
E-334	Weighing Scale	A	1	0 to 100 kg, Flat Type	Measurement of weight	Basic
E-341	Refrigerated Table Top Centrifuge	A	1	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction of sample protecting from denaturation	I-5
E-342	Pulsed Field Gel Electrophoresis System	A	1	Max. Input Voltage/ Current: 450V/ 500mA, Interval Time: 0.1 s	Study for principle of electrophoresis under pulsed field and operation	I-4
E-347	Laminar Flow Hood	A	1	Working Area: 1,500 \times 800 mm, Gate Height: 800 mm	Study of principle of germ free operation	Basic
E-348	Fluorescent Microscope	F	1	Total Magnification : 40X-1,000X, Fluorescence : Reflected light fluorescence vertical illuminator, Halogen light	Observation of marked antigen-antibody reaction by fluorescence antibody method	Common
E-349	Upright Freezer	A	1	Temp.: - 20°C, Cabinet Type 400 liters	Mid-term preservation of reagent and sample	Basic
E-352	Blood Cell Counter: Automated	A	1	Whole blood mode 18 Parameters, Predilute mode 8 Parameters	Multiple blood component counter for direct microscope analysing	I-3
E-353	Mechanical Stirrer	B	2	Speed: Max. 1,200 rpm, Stand, Straight Blade and Paddle	Dissolution and mixing of solid	Basic
E-359	Gel Documentation Reader	A	1	CCD Camera, Dark Field Box, PC, Resolution: 750 \times 600 pix	Structural analysis of DNA section	I-6
E-362	Cryogenic Tank / Incubator	A	1	Insulated Container (Liquid Nitrogen), Capacity: 4 (10 days), 10(45 days), 25(100 days), 35(150 days) liters	Container of liquid nitrogen	Basic
E-363	Culturing Millipore System	F	1	Capacity:1.5 liter/min., Double Filtering System	Common use and Production of ultra pure water for reagent/buffer preparation	Common
E-365	Cuvette Waster	A	1	Ultrasonic cleaning system, Capacity: 200 to 500 pcs/ batch	Cleaning for plastic micro tube and cuvette	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-366	Densitometer: for gel	A	1	Measuring Type: Beam Type, Lamp Source: Tungsten, Measuring Area: 190×190 mm	Measurement of liquid density	Basic
E-374	Glass Head Cell Homogenizer	B	2	Speed: Max. 2,000 rpm, Glass beads head	Emulsifying and mixing without scratching cells	Basic
E-376	Hetovac Centrifuge	A	1	Speed: 1,300 rpm, Temperature control 60°C	Separation of blood	Basic
E-377	Hot Plate with Magnetic Stirrer	C	4	Max. Temp. 400°C, Revolution 1,300 rpm, Plate Size: 130 x 130 mm	Dissolution and mixing of solution with heating	Basic
E-389	Pipette Set	C	4	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0- 100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-405	TLC System	A	1	Size: 20x20 cm (glass), Thickness: Max. 1.4mm	Study of theory of thin layer chromatography and eluting of lipid, amino acid	I-I
E-407	Conical Glass Tubes	C	20	Capacity :10, 35, 50ml	Spits form for collecting cells	Basic
E-410	Vacuum Pump	A	1	Delivery Speed: 8 liter/ min., Min. Pressure: 550 mmHg	Control of vacuum condition for experiment	Basic
E-411	Test Tube Mixer	A	1	Mixer, for Test-tuber, Revolution range : Max. 2,500rpm	For mixing test tube sample	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic

Microbiology / Immunology / Haematology

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-1a	Fixed Television Set	A	1	32", Multi System, Standing Rack: 111,200 x 800 x 700mm, Steel Frame with Holding Strap	Visual efficiency for teaching by video tape	Common
A-1b	Mobile TV	F	2	25", Multi System, Moveable Table: 111,200 x 800 x 700mm, Steel Frame with Caster and Holding Strap	Visual efficiency for teaching by video tape	Common
A-4	Over- Head Projector	A	3	Aperture Size: A4, Projection Distance: 1.5 - 3 m, Projection Material: Transparency, Projection Lamp : Halogen	Visual efficiency for teaching by OHP	Common
A-5	Screen (for Projector)	A	3	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x1,800 mm	Screen for projectors	Common
A-6	Slides Projector	A	3	Circular Tray Type, Slide Size: 2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Common
A-7	Decto-Phone	F	3	Voice Recorder/Player, Recording Media: Magnetic Tape, Recording Time: 1 hr	Voice records of seminar and anatomy experiment	Common
A-8	Tape- Recorder	F	1	Stereo, Frequency Response: 40 -14,000Hz, Built-in Speaker, Power Requirement: DC Battery and AC	Voice records of seminar and long lecture	Common
A-12	LCD	F	3	Desktop Type, LCD Panel 8.4" (A4), Resolution :640x480 pixels	Visual efficiency for teaching by OHP picture PC treated	Common
Experiment and Training Equipment						
E-2	Deep Freezer	F	1	Temp. Control Range: -80 to RT, Capacity: 180 liter, Chest Type	Long term preservation of samples(micro-creature, blood, tissue, cell-culture)	Basic
E-4	Big Size Autoclave	F	1	Capacity: 100 liters, Automatic Control, Sterilising Temp. 105-135 °C	Sterilisation for spore	IX-6, XIII-2
	Small Size Autoclave	F	1	Capacity: 15 liters, Automatic Operation, Sterilising Temp. 105-125°C	Sterilisation for equipment	Basic
E-12	Lyophilizer	F	1	Temp of cold trap : -50°C, Ice holding capacity :1.5 L/batch	Freeze dry of samples for long term preservation	IX-4
E-23	Flouoro-s- Imager: Flouro Scanner	F	1	Light source: Fluorescent white, Wave length: 400-750nm, Resolution: 40 micro	Image analysing for quadratic electrophoresis of protein	IX-5, XIII-1
E-49	Heating- Cooling Circulator	A	1	Temperature control range : -20 to +40°C, Circulating Volume: 15 liters/ min	Rapid cooling of reagent and control temperature	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-52	Sonicator	A	1	Desktop type Ultrasonic Cleaner, Tank Capacity: 3 liter, Frequency: 20 to 45 Hz	Cleaning and sanitation for glass, metal equipment by ultra sound wave	Basic
E-57	Top Load Balance	B	3	Max. capacity : 4,000g(Readability: 0.1g)	Measurement of reagent	Basic
E-60a	Water Bath (Regular Type)	A	2	Temperature setting range : +5 ~ 90°C, Bath Capacity: 15 liter	Activation of samples under controlled temperature water	XI-10
E-60b	Water Bath (Shaking Type)	A	1	Reciprocating shaking system, Capacity: 15 liter, Temp.+10 to 80°C	Activation of shaking samples under controlled temperature water	XIII-1
E-76	Fluid Friction Apparatus	A	1	Experiment for Liquid Velocity, Pressure, etc.	Studying the principle of fluid friction for study of blood flow and blood vessel	XI-1
E-92	Bunsen Burner	E	21	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-93	Biological Safety Cabinet	B	3	900x400x800, chemical proof	Preservation of reagent, samples under constant temperature and germ free	Basic
E-96	Incubator	A	1	Air jacket, heat conduction, Capacity: 70 L, Temp.: RT to 70 deg	Cultivation of bacteria and virus and heating sample under constant temperature	Common, IX-2
E-97	Dark Field Microscope	A	1	Binocular, Objective Lens: 4/ 10/ 40/ 100X, Eye Lens: 10 X, Lamp: Halogen	Observation of vital thick specimens under contrast circumstance	XI-1
E-103	Microscope Plan Apochromat Objectives	A	1	Total Magnification : 40X-1,000X, Microscope : Halogen illumination for transmitted light, Photo system	Production of teaching slides	Common
E-106	Fume- Hood	A	1	Air volume : 20m ³ /min, Dimension : Approx.1,500(W) x 800(D) x 2,300(H)mm, Material: Chemical Register	Germ free environmental work space by negative pressured air	IX-6
E-107	Slide Cabinet for Slide Storage	B	2	Number of drawers :12 pcs., Capacity :150 microscope slides	Safety storage of slide specimens	Basic
E-108	Binocular Microscope for Students Plan	E	15	Total Magnification : 40X-1,000X, Binocular Microscope : Halogen illumination	Observation of slide samples (blood, micro-creature, tissues)	Common
E-109	CO ₂ Incubator	F	1	Air jacket type, Effective capacity :150 Litter, Temperature range :Ambient temp. +5 ~ 50°C, CO ₂ range :0 ~ 20%	Erobie cultivation of bacteria in CO ₂ gas circumstance for unsealed ware	IX-2
E-112	Binocular Polarising Microscope	F	2	Total Magnification : 40X-1,000X, Built-in light halogen, Polarising condenser, built-in aperture diaphragm, 360 degrees routable polarizer	Observation tissues by microscope with polarising filter	Common
E-113	Automatic Strainer	F	1	Slide capacity per batch : 12pcs, Processing method : Continuous loading, Washing station, Drying station	Automatic quick staining of HE-stain or Papanicolaou-stain for cytodiagnosis	Common

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-115	Refrigerator	A	1	200 L., 3 Doors, Home use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	B	3	Chemical and solvent proof painting, Size: 850×400×800(H)mm	Preservation of reagent	Basic
E-118	Teaching Microscope with Television Video	F	1	Total Magnification : 40X-1,000X, Built-in halogen light, Multi-purpose 3-CCD camera for versatile video applications, Video system	Slide teaching assistant system for microscope with CCD camera	IX-4
E-120	Dissecting Microscope	D	8	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Microscope system with dissecting stage for experimental observation	IX-9
E-121	pH Meter	C	4	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14(Accuracy: 0.01pH)	pH level measurement for preparation of reagent and solution	IX-2
E-213	Stop Watch (Interruption type)	B	3	Analogue type, 1 min. / around, interruption	Measurement of reaction time	XI-10
E-262	Glass Ware Washer	A	1	Washing method: Pressurised water-jet, Capacity: 100 liters	Wash equipment completely to avoid contamination	Basic
E-287	Oven	A	1	Forced air-circulation type, Working temperature :40 to 250°C, Capacity: 10 liters	Sterilisation by dry heating for metal, glass, ceramic ware and dry chemistry	IX-6
E-290	Micro Centrifuge	A	1	Max. speed :13,000 rpm(16,000 xg)	Separation and extraction for small volume by middle speed centrifugation	IX-8, XIII-4
E-292	Tissue Homogenizer	A	1	Speed range :27,000rpm, Paddle	Smashing tissue and extraction of cellular substance	XIII-1
E-297	Slide Warmer	A	1	Number of slides :60 slides, Hot Plate, Temp.: 5 to 70 deg	Quick drying for preparative slide glass	IX-2
E-298	Staining set	C	4	Staining jar : Glass made, Staining basket :Stainless steel made	Manual staining system to understand HE-stain process for pathologic specimens	IX-2
E-341	Refrigerated Table Top Centrifuge	B	2	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction for sample (blood) to sedimentate such as cold agglutinin	XI-1
E-348	Fluorescent Microscope	F	1	Total Magnification : 40X-1,000X, Fluorescence : Reflected light fluorescence vertical illuminator, Halogen light	Observation of marked antigen-antibody reaction by fluorescence antibody method	IX-8, XIII-3
E-349	Upright Freezer	A	1	Temp.: - 20°C, Cabinet Type: 400 liters	Mid-term preservation of reagent and sample	XI-11
E-350	ELIZA Reader	A	1	Measurement range : 400~650nm, Light source : Tungsten halogen lamp, 4 size of filters	Diagnosis of enzyme immuno assay method	IX-8

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-352	Blood Cell Counter: Automated	A	1	Whole blood mode 18 Parameters, Predilute mode 8 Parameters	Multiple blood component counter for direct microscope analysing	XI-1
E-354	Sealer	A	1	Sealing length : 300 mm	Sealing pack for organ tissue preservation from oxidation and degeneration	Basic
E-368	Electrophoresis	A	1	Gel size 80 x 70mm, Power supply unit	Measuring of electro chemical potential gradient for DNA and RNA of virus	IX-8, XIII-4
E-377	Hot Plate with Magnetic Stirrer	B	2	Max. Temp. 400°C, Revolution 1300 rpm, Plate Size: 130x130 mm	Dissolution and mixing of solution with heating	Basic
E-378	Immunoblotter	A	1	Gel size: 20 x25 cm, Vacuum pump	Multiple diagnosis of immuno serum	XI-11
E-379	Incubator: Shaking	A	1	Temp. : RT to 60 °C, Stroke: 250 rpm, Size: 300x300 mm	Cultivation of bacteria with shaking environment	Basic
E-381	Microscope: Interphased with Screen with Phase Contrast Adapter, Double Head	A	1	Total Magnification : 40X-1,000X, Halogen light, Multi-purpose 3-CCD camera	Visual efficiency for explanation of slides with TV monitor	Common
E-382	Mixer: Blood tube	B	2	Rotation speed :30 rpm, No. of Roller: 5, Table Top Type	Rolling mixing of whole blood sample for preventing coagulation	XI-10
E-388	Pipette Cleaning System	B	2	Capacity: ϕ 130×500mm,	Pipette cleaning by ultra sound wave	Basic
E-389	Pipette Set	D	10	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-391	Plasma Extractor	B	2	Speed: 1200 rpm	Extraction of plasma	XI-8
E-395	Safety Cabinet for Microbiology	A	1	Cabinet Type, Size: 800 x400 x 800, Sliding Glass Door, Chemical Register	Preservation of samples under constant temperature and germ free	Basic
E-397	Serofuge	B	2	Rotor Speed :600/ 1,500/ 3,000 rpm	Separation of plasma	XI-3,4
E-398	Shaker: Slide Shaker with Semicircular Motion	B	1	Speed : Max. 200 rpm, Orbital: 30 mm, Table Size: 400x400 mm	Flat plate reciprocating shaker for reaction glass plate mixing	XI-1
E-403	Thermometer Set	B	3	Range : -70 ~ 50°C	Measuring constant temperature in refrigerator, water bath	IX-2
E-405	TLC System	A	1	Size: 20x20 cm (glass),	Study of theory of thin layer chromatography and eluting of protein	XI-11, XIII-4
E-407	Conical Glass Tube	C	20	Capacity :10, 35, 50ml	Collecting sediment of urine	XIII-8
E-409	UV Transillminator	A	1	UV/White light : 360 nm, Portable Type	Reading of electrophoresis gel with UV illumination	IX-8
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
Teaching Materials						
T-1	Slide Set for Microbiology	E	20	Presents an overview of microbiology. Includes examples from three kingdoms: Monerans (bacteria and blue-green algae), Fungi (moulds, yeast, and mushroom), and Protists (protozoa and algae)	Slide for microscope diagnosis in various form of bacteria and parasite	IX-1

Molecular Biology

No.	Equipment Name	Std	Q'ty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-4	Over- Head Projector	A	1	Aperture Size(A4), Projection Distance:1.5 - 3 m, Projection Material: Transparency, Projection Lamp :Halogen	Visual efficiency for teaching by OHP	Common
A-5	Screen (for Projector)	A	1	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x1,800 mm	Screen for projectors	Common
A-6	Slides Projector	A	1	Circular Tray Type, Slide Size:2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Common
A-7	Decto- Phone	F	1	Voice Recorder/Player, Recording Media: Magnetic Tape, Recording Time: 1 hr	Voice records of seminar and anatomy experiment	Common
A-12	LCD	F	1	Desktop Type, LCD Panel 8.4" (A4), Resolution : 640x480 pixels	Visual efficiency for teaching by OHP picture PC treated	Common
Experiment and Training Equipment						
E-1	Amino Acid Analyzer	F	1	Solvent Delivery Pump, Fluorescence HPLC(200 to 600 nm) monitor, Volume Column Oven: Forced air circulation type, Temperature setting range : 4 - 80 °C	Training for integrated analysis method of protein sequence and size	Common , VI-6
E-15	Ultra Centrifuge	F	1	80,000 rpm, Refrigeration System, Rotor	Separation of virus and extraction of cellular substance	VI-3
E-19	Blood Bank Refrigerator	F	1	400 L, Automatic Defroster, Operating Temp. +4°C	Preservation of sample for short period	Basic
E-48a	Analytical Balance Sensitivity - Five D.P	A	1	Max. capacity : 200g, Readability : 0.1mg, Canopy	Measurement of micro dry chemistry and reagent	Basic
E-48b	Analytical Balance Sensitivity - Four D.P	A	1	Max. capacity : 400g, Readability : 0.001g, Canopy	Measurement of dry chemistry and reagent	Basic
E-49	Heating- Cooling Circulator	A	1	Temperature control range : -20 to +40°C, Circulating Volume: 15 liters/min	Rapid cooling of reagent and control temperature	Basic
E-52	Sonicator	A	1	Desktop type Ultrasonic Cleaner, Tank Capacity: 3 liter, Frequency: 20 to 45 Hz	Cleaning and sanitation for glass, metal equipment by ultra sound wave	Basic
E-57	Top Load Balance	A	1	Max. capacity : 4,000g (Readability: 0.1g)	Measurement of reagent	Basic
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +5 ~ 90°C, Bath Capacity: 15 liter	Activation of samples under controlled temperature water	Basic
E-92	Bunsen Burner	C	5	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-93	Biological Safety Cabinet	A	1	900x400x800, Chemical proof	Preservation of reagent, samples under constant temperature and germ free	Basic

No.	Equipment Name	Std	Qty	Major Specification	Purpose	Curriculum
E-100	Tissue Centrifuge	A	1	Number of specimens: Max. 4 specimen, Rotation speed : 300-3,500 rpm	Collecting of floating tissues	VI-7
E-101	Floating Out Bath for Paraffin Sections	A	1	Bath Volume: 9 liter, Setting temp. : 20 ~ 70°C	Flattening out wrinkled paraffin sections by heating	VI-7
E-102	Tissue Processor	A	1	Station System, Glass beaker :10 pcs, Paraffin pot: 2 pcs, Controller	Automatic embedding in sealed container	VI-7
E-112	Binocular Polarizing Microscope	F	1	Total Magnification : 40X-1,000X, Built - in light halogen, Polarising condenser, 360 degrees rotatable polarizer	Observation tissues by microscope with polarising filter	Common
E-113	Automatic Stainer	F	1	Processing method : Continuous loading(12 pcs/ Batch)	Automatic quick staining for cytodiagnosis	VI-7
E-115	Deep Freezer- Cabinet type (Large)	A	1	200 L, 3 Doors, Home use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	A, B	1	Chemical and solvent proof painting, Size: 850×400×800(H)mm	Preservation of reagent	Basic
E-118	Teaching Microscope with Television Video Output via Camera - 3CCD Plan Apochromat Objectives Plan	F	1	Total Magnification : 40X-1,000X, Built-in halogen light, Multi-purpose 3-CCD camera for versatile video applications, Video system	Slide teaching assistant system for microscope with CCD camera	Common
E-120	Dissecting Microscope	B	2	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Microscope system with dissecting stage for tissue structural observation	Basic
E-121	pH Meter	A	1	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14(Accuracy: 0.01pH)	pH level measurement for preparation of reagent and solution	VI-9
E-213	Stop Watch (Interruption Type)	A	1	Analogue type, 1 min. / around, interruption,	Measurement of reaction time	Basic
E-321	Hematocrit Centrifuge	A	1	Speed 12,000 rpm, Rotor	Separation of small volume (blood) by capillary centrifugation	VI-7
E-341	Refrigerated Table Top Centrifuge	A	1	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction for sample protecting from denaturation	Basic
E-345	PCR Thermal Cycler	A	1	No. of Sample: Max. 96, Temperature range : ~ 99°C	Detection of specific virus gene by DNA synthesis in PCR method	VI-7
E-361	Counter: Manual White Blood Cell Differential	D	11	Mechanical Type, 8 Keys	Counter for blood cell and cerebrospinal fluid	VI-7
E-368	Electrophoresis	B	2	Gel size 80 x 70mm, Power supply unit	Measuring of electro chemical potential gradient for protein	VI-5

No.	Equipment Name	Std	Qty	Major Specification	Purpose	Curriculum
E-375	Hematocytometer Set	D	11	Thoma ruling, Fuchs-Rosenthal	Blood cell counter plate for microscope observation by Toma and Fuchs-Rosenthal method	VI-7
E-377	Hot Plate with Magnetic Stirrer	C	4	Max. Temp. 400°C, Revolution 1,300 rpm, Plate Size: 130x130 mm	Dissolution and mixing of solution with heating	Basic
E-406	Tray : Staining	C	4	Material : Stainless steel, Dimensions : Approx. 350(W) x 300(D) x 40(H) mm	For stain or storage of electrophoresis gel	VI-5
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic

Anatomy / Pathology

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-1a	Fixed Television Set	A	1	32", Multi System, Standing Rack: 111,200 x 800 x 700mm, Steel Frame with Holding Strap	Visual efficiency for teaching by video tape	Common
A-1b	Mobile TV	F	1	25", Multi System, Moveable Table: 111,200 x 800 x 700mm, Steel Frame with Caster and Holding Strap	Visual efficiency for teaching by video tape	Common
A-4	Over- Head Projector	A	2	Aperture Size: A4, Projection Distance: 1.5 - 3 m, Projection Lamp : Halogen	Visual efficiency for teaching by OHP	Common
A-5	Screen (for Projector)	A	2	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x 1,800 mm	Screen for projectors	Common
A-6	Slides Projector	A	2	Circular Tray Type, Slide Size: 2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Common
A-7	Decto- Phone	F	2	Voice Recorder/Player, Recording Media: Magnetic Tape, Recording time: 1 hr	Voice records of seminar and anatomy experiment	Common
A-8	Tape- Recorder	F	1	Stereo, Frequency Response: 40 -14000Hz, Built-in Speaker, Power Requirement: DC Battery and AC	Voice records of seminar and long lecture	Common
A-11	Scanner - Color	F	2	Flat bed), Resolution 1200x600 dpi, Scanning Size 216x297 mm,	Production and analysis of teaching color materials and photos	Common
A-12	LCD	F	2	Desktop Type, LCD Panel 8.4" (A4), Resolution :640x480 pixels	Visual efficiency for teaching by OHP picture PC treated	Common
A-29	Laser Printer Color	F	1	Color Laser Beam Printer, Resolution 600x300 dpi, 8MB, Paper Size A4	Duplication and analysis of teaching color materials and photos	Common
A-34	Video Camera	F	1	CCD 800,000 pixel, LCD Color Monitor 3.5", Optical Zoom and Digital Zoom, DV (Digital Video) Format	Recording and production of teaching materials such as anatomic experiment	Common
Experiment and Training Equipment						
E-4	Medium Size Autoclave	F	1	Capacity: 50 liters Automatic Operation, Sterilising Temp. 105 - 135°C	Sterilisation for equipment	Basic
E-25	Anatomical Chart	A	1	25 kinds Laminated charts, Poster size(65 x50 cm), with holding stand	Study of anatomic whole structure of body	Basic
E-30	Ostomy Model	A	1	Reproduction of an abdomen showing the anatomy of both a colostomy and ileostomy to provide life like functions and appearance. Full scale.	Training of catheter, diagnosis and palpation	XIV-3
E-33	Ear Syringe Trainer	A	1	Full scale	Training for sanitation of external and inner ear	XIV-21
E-34	Intramuscular Injection	A	1	Full scale	Training of muscle injection on haunch	XIV-4

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-35	Paediatric Injection Head Simulator	A	1	For demonstrating and practising infusions and injections in the temporal and jugular veins of a 6-month-old infant.	Training of intervenous injection for newborn child	XIV-9
E-37	Series Showing Pregnancy	A	1	Natural size, showing the uterus with embryo and fetes from the first to the seventh month of pregnancy in prone and upright position.	Study for embryological process	XIV-7
E-38	Enema Administration Simulator	A	1	Full scale	Training of enema and diagnosis and palpation	XIV-12
E-39	Peritoneal Dialysis Simulator	A	1	Full scale	Training of tube insertion for peritoneal dialyse(CAPD)	XIV-14
E-40	Surgical Bandaging Simulator	A	1	Consists of a female torso with flexible, lifelike skin. Full scale of upper body	Bandage training for surgical operated body	XIV-3
E-41	Model of a set of Teeth	A	1	4 kinds of infant to Adult with a large toothbrush for demonstration	Recognition for structure of teeth and its growth	XIV-3
E-42	Paediatric Injection Arm Simulator	A	1	Pull scale	Training of injection for child	XIV-4
E-49	Heating- Cooling Circulator	B	2	Temperature control range : -20 to +40°C, Circulating Rate: 15 liters/min	Rapid cooling of reagent and control temperature	Basic
E-57	Top Load Balance	B	2	Max. capacity : 4,000g (Readability: 0.1g)	Measurement of reagent	Basic
E-84	Respiratory System Model	A	1	Full scale. Separates into 7 parts. Mounted on board.	Study of respiratory system	XIV-10
E-85	Digestive System Model	A	1	Natural size. Relief model. Showing the alimentary canal from the mouth to the rectum	Study of digestive system	XIV-12
E-86	Circulatory System Model	A	1	Relief model. Half scale	Study for blood circulation of body	XIV-10
E-87	Urinary System Model	A	1	2/3 scale	Study of urinary system	XIV-13
E-88	Adult CPR Training Manikin	A	1	Cpadene electronic 2/3-size manikin with electronic monitoring, memory and printer unit., with carrying Case	Training of artificial respiration and CPR for adult	XIV-8,10
E-89	Child CPR Training Manikin	A	1	CPR prime represents a premature infant. CPR Timmy represents a 3 years old child	Training of artificial respiration and CPR for child	XIV-8,10
E-90	Ear Model	A	1	Enlarged approx. 3 times. 4 parts	Study of auditory system	XIV-21
E-92	Bunsen Burner	E	13	Butane gas, 150mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-93	Biological Safety Cabinet	B	2	900x400x800, Chemical proof	Preservation of reagent, samples under constant temperature and germ free	Basic
E-98	Rotary Microtome	A	1	Section thickness :From 2 to 20 microns , Manual	Cutting paraffin tissue gradually in various thickness for microscope observation	X-1
E-99	Sledge Type Microtome	A	1	From 0.5 to 12 micron , Manual	Cutting soft paraffin tissue in various thickness for microscope observation	X-1

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-103	Microscope Plan Apochromat Objectives	A	1	Total Magnification : 40X-400X, Microscope : Halogen illumination for transmitted light, Photo system	Production and analysis of teaching slides	Common
E-104	Embedding Center	A	1	Paraffin tank, Temp. range :50 ~ 70°C, Hot Plate, Paraffin Warmer, Warming tank	Manual embedding in each process(hydration, de-fat, refill)	X-1
E-106	Fume- Hood	B	2	Air volume : 20m ³ /min, Dimension : Approx.1,500(W) x 800(D) x 2,300(H)mm, Material: Chemical Resister	Germ free environmental work space by pressured air	Basic
E-107	Slide Cabinet for Slide Storage	B	2	Number of drawers :12 pcs., Capacity :150 microscope slides per drawer	Safety storage of slide specimens	Basic
E-108	Binocular Microscope for students Plan	E	15	Total Magnification : 40X-1,000X, Binocular Microscope : Halogen illumination, Stage Case	Observation of slide samples	Common
E-113	Automatic Stainer	F	1	Slide capacity per batch : 12pcs, Processing method : Continuous loading, Washing station, Drying station	Automatic staining of HE-stain or Papanicolaou-stain for cytodiagnosis	X-1
E-115	Refrigerator (Home Type)	A	2	200 L, 3 Doors, Home use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	B	2	Chemical and solvent proof painting, Size: 850×400×800(H)mm	Preservation of reagent	Basic
E-120	Dissecting Microscope	C	6	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Microscope system with dissecting stage for experimental observation	Common
E-121	pH Meter	B	2	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14(Readability: 0.01pH)	pH level measurement for preparation of reagent and solution	Basic
E-213	Stop Watch (Interruption type)	C	5	Analogue type, 1 min. / around, interruption	Measurement of reaction time	Basic
E-269	Jacket Organ Bath	B	2	Capacity: 20 liters,Temp. Range: RT to 80°C, Stainless Steel	Rinse out and straightening of organ tissue from experimental animals	Basic
E-278	High Speed Centrifuge with Rotors	A	1	Max. speed :23,000 rpm (50,000 xg)	Separation and extraction of mitochondria demarcation level by middle speed centrifugation	Basic
E-290	Micro Centrifuge	A	1	Max. speed :13,000 rpm (16,000 xg)	Separation and extraction for small volume by middle speed centrifugation	Basic
E-296	Multi- teaching Microscopes	C	1	Total Magnification : 40X-1,000X, Halogen light, Multi-viewing : 4 Observers	Central control observation system for microscope	Common
E-297	Slide Warmer	A	1	Number of slides :60 slides, Range of temperature :RT to 70°C	Quick drying for preparative slide glass	X-1

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-298	Staining Set	B	2	Staining jar : Glass made, Staining basket :Stainless steel made	Manual staining system to understand HE-stain process for pathologic specimens	X-I
E-299	X-Ray Film Illuminator	A	1	Wall mount type, Large size (1,200x500 mm)	Training for diagnosis of X- ray photos	Common
E-321	Hematocrit Centrifuge	A	1	Speed 12,000 rpm, Rotor	Separation of small volume (blood) by capillary centrifugation	Common
E-341	Refrigerated Table Top Centrifuge	B	2	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction for sample (blood) to sedimentate such as cold agglutinin	Basic
E-348	Fluorescent Microscope	F	1	Total Magnification : 40X- 1,000X, Fluorescence : Reflected light fluorescence vertical illuminator, Halogen light	Observation of marked antigen-antibody reaction by fluorescence antibody method	Common
E-377	Hot Plate with Magnetic Stirrer	A	1	Max. Temp. 400°C, Revolution 1,300 rpm, Plate size: 130 x130 mm	Dissolution and mixing of solution with heating	Basic
E-381	Microscope: Interfaced with TV Screen with Phase Contrast Adapter, Double Head	A	1	Optical System : Interfaced TV system, Total Magnification : 40X-1,000X, Halogen light, Multi-purpose 3-CCD camera for versatile video applications	Slide teaching assistant system for microscope with TV	Basic
E-382	Mixer: Blood Tube	B	2	Rotation speed :30 rpm, No. of Roller: 5, Desk Top Type	Rolling mixing of whole blood sample for preventing coagulation	Basic
E-388	Pipette Cleaning System	A	1	Capacity: ϕ 130×500mm,	Pipette cleaning by ultra sound wave	Basic
E-389	Pipette Set	D	10	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-398	Shaker: Slide Shaker with Semicircular Motion	A	1	Speed : Max. 200 rpm, Orbital: 30 mm, Table Size: 400x400 mm	Flat plate reciprocating shaker for reaction plate glass mixing	Basic
E-403	Thermometer	C	4	Range : -70 ~ 50°C	Control constant temperature in refrigerator, water bath	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bulb, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic
Teaching Materials						
T-2	Slide Set for Normal Histology	E	20	Comprehensive collection of human tissue slides for medical schools for instruction. Slides are packaged in a chemically resistant, cork-lined slide box with a rust resistant clasp.	Slide for microscope diagnosis in various form of normal and pathogenic human body tissue	X-I
Anatomic Models						
M-1	Thoracic Spinal Column	A	1	Consisting of the 12 thoracic vertebrae with intervertebral discs	Study of thoracic spinal column	XIV-10
M-2	Lumber Spinal Column	A	1	Consisting of 12 lumber vertebra with intervertebral discs with stand	Study of lumber spinal column	XIV-12

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
M-3	6 Vertebrae	A	1	Consisting of 6 vertebra	Study of lumbar spinal column	XIV-17
M-4	Arm Skeleton	A	1	Consists of hand, lower arm, and upper arm of skeleton. Full scale.	Study of arm function	XIV-15
M-5	Leg Skeleton	A	1	Consists of foot and leg. Full scale.	Study of leg function	XIV-4
M-6	Advanced Medical Torso (28part)	A	1	Upper body	Study of general organs	XIV-4
M-7	Super Muscle Torso	A	1	30 parts division. Upper body	Study of muscle function	XIV-4
M-8	Disc Torso-15 slices	A	1	Upper body, full Scale	Study of organs and tissues	XIV-12
M-9	Median+Frontal Section of Head	A	1	Full scale, Center and upper Sections	Study of head structure	XIV-16
M-10	Relief Models	A	1	Full Scale, Center Sections	Study of head structure	XIV-16
M-11	Larynx	A	1	2 times Scale	Study of larynx	XIV-19
M-12	Advanced Left Ear (6 parts)	A	1	3 times scale	Study of auditory system	XIV-19
M-13	Eye in Orbit 4 Times Full Size	B	2	2 times Scale	Study of visual function	XIV-20
M-14	Skin Section 200 times	A	1	Skin Sections, 700 times scale	Study of binding tissue and skin	XIV-4
M-15	Relief Model	A	1	Full Scale	Study of head and neck function and neuron system	XIV-16
M-16	Brain 4 parts	A	1	Full Scale	Study of head and neck function and neuron system	XIV-16
M-18	Brain with Arteries (10 part with base of head)	A	1	Full Scale	Study of head and neck function and neurone system	XIV-16
M-20	Spinal Cord, 6 Times Full Size	A	1	6 times Scale, with base	Study of spinal cord and neurone system	XIV-16
M-21	De-Luxe Heart-7 part	A	1	Full Scale	Study of blood circulation	XIV-17
M-22	Basic Heart- 1 part	A	1	Full Scale with Stand	Study of blood circulation	XIV-8
M-24	Heart with Oesophagus Aorta Windpipe	A	1	2 times model	Study of heart function	XIV-8
M-25	Heart with Thymus - 3 parts	A	1	3/4 times Scale	Study of heart function	XIV-8
M-26	Lung -5 parts	A	1	Half Scale	Study of respiratory system	XIV-10
M-27	Digestive System-3 parts	A	1	Full Scale	Study of digestion system	XIV-12
M-28/29	Stomach with Duodenum + Pancreas 3 parts	A	1	Layers of stomach wall, lower part of esophagus near, cardiac portion of stomach, upper part of duodenum, vessels and nevus, Full Scale	Study of digestion system	XIV-13
M-30	Intel Organs -2 parts	A	1	Full Scale	Study of digestion system	XIV-13
M-31	Liver with Gall Blander	A	1	Full Scale	Study of digestion system	XIV-13
M-32	Kidney with Adrenal Gland, 2-parts	A	1	Full Scal	Study of digestion system	XIV-13
M-33	Kidney section-Basic Version	A	1	3 Times Scale	Study of digestion system	XIV-12
M-34	Liver with Gall Blander, Pancreas and Duodenum	A	1	Full Scale	Study of digestion system	XIV-12
M-36	Kidney Nephrons Blood Vessel, Renal Corpuscle	A	1	3, 120, 700 Times Scale, with Stand	Study of uric system	XIV-12
M-38	Complete Urinary System, Dual Sex 6 parts	A	1	Both Sex, Full Scale	Study of reproduction, urinary system	XIV-13
M-40	Female Pelvis-2 parts	A	1	Female Model, Full Scale	Study of female reproduction, urinary system	XIV-13
M-41	Male Pelvis-2 parts	A	1	Male Model, Full Scale	Study of male reproduction, urinary system	XIV-13
M-44	Embryonic Development (12 stages)	A	1	Two-cell stage to 2 month embryo	Study of embryonic process	XIV-7
M-45	S-J. STR	A	1	25 Times Scale with Stand	Study of embryonic process	XIV-7
M-46	Pregnancy Series- 8 models	A	1	1st month to 7th month	Study of embryonic process	XIV-7
SCISSORS						
M-47	Dressing Scissors	A	1	Length : 14cm, straight blunt / blunt	Anatomic experiment	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
M-48	Sharp - Str. 14cm	A	1	Length: 14 cm, Straight sharp/sharp	Anatomic experiment	Basic
M-49	Sharp - Str. 18cm	A	1	Length: 18cm, straight sharp / sharp	Anatomic experiment	Basic
M-50	Mayo Scissors -Chamfered Blades	A	1	Length: 14cm, Style : curved	Anatomic experiment	Basic
M-51	Mayo Scissors Flat Blades Str.	A	1	Length 14 cm, Straight	Anatomic experiment	Basic
M-52	Metzenbaum Scissors Str.	A	1	Length 14 cm, Straight	Anatomic experiment	Basic
M-53	Iris Scissors - Sharp Cof Heavy Weight	A	1	11cm, Straight sharp / sharp	Anatomic experiment	Basic
DISSECTING FORCEPS						
M-54	Dissecting Forceps Block End	A	1	Length : 13cm, Style : 1x2 teeth	Anatomic experiment	Basic
M-55	Dissecting Forceps Fine Points Toothed 1x2	A	1	Length : 13cm, Style : 1x2 teeth fine points	Anatomic experiment	Basic
M-56	Dissecting Forceps 2 x 3 teeth	A	1	Length : 13cm, Style : 2x3 teeth	Anatomic experiment	Basic
M-57	Bonney Dissecting Forceps 1x2 teeth	A	1	Length : 15 cm, Style : 1x2 teeth	Anatomic experiment	Basic
M-58	Treves Dissecting forups. 1x2 teeth	A	1	Length : 15cm, Style : 1x2 teeth, Treves model	Anatomic experiment	Basic
M-59	Fixation Dissecting Forceps 1x2 teeth	A	1	Length : 15cm, Style : 1x2 teeth, fine points	Anatomic experiment	Basic
ARTERY FORCEPS						
M-60	Kilner Artery Forceps	A	1	Length : 14 cm, Style : without teeth, curved	Anatomic experiment	Basic
M-61	Serrated B/J COP	A	1	Length : 14cm, Style : without teeth, curved	Anatomic experiment	Basic
M-62	Spencer Wells Artery Forceps Serrated,	A	1	Length : 20cm, Style : without teeth, straight	Anatomic experiment	Basic
M-64	Lister Sinus forceps B.J. Serrated	A	1	Length : 18cm, Style : serrated, Lister Model	Anatomic experiment	Basic
HOLDER						
M-65	Higgs Needle Holders	A	1	Length : 16cm, Style : with T/C	Anatomic experiment	Basic
M-67	Kilner Needle Holder cross serrated jaws B/J.	A	1	Length : 16cm, Style : with T/C, Kilner	Anatomic experiment	Basic
SCALPEL						
M-68	West Retractor Self Retaining 3X4 Teeth Blunt Points	A	1	Length : 16cm, Style : self retaining 3x4 blunt	Anatomic experiment	Basic
M-69	Liston Amputation Knife	A	1	Length: blade Length 18cm, Style : amputation	Anatomic experiment	Basic
M-70	B.P. Standard Scalpel Handle No.3	A	2	Length : 12cm, Style : B.P NO. 3	Anatomic experiment	Basic
M-71	B.P Standard Scalpel Handle No. 4	A	2	Length : 12cm, Style : B.P NO. 4	Anatomic experiment	Basic
BLADE						
M-73	Blade No.10	A	1	Material : Stainless steel, Style : No. 10	Anatomic experiment	Basic
M-74	Blade No.15	B	2	Material : steel blade, Style : No. 15	Anatomic experiment	Basic
M-75	Blade No.20	A	1	Material : Stainless steel, Style : No. 20	Anatomic experiment	Basic
M-76	Blade No.21	A	1	Material : Stainless steel, Style : No. 21	Anatomic experiment	Basic
M-77	Blade No.23	A	1	Material : Stainless steel, Style : No. 23	Anatomic experiment	Basic
M-78	Blade No.24	A	1	Material : Stainless steel, Style : No. 24	Anatomic experiment	Basic
M-79	Silver Probe with Eye	A	1	Material : Silver, Length : 18cm, Style : with eye	Anatomic experiment	Basic
M-80	Macdonald Dissector Double Ended	A	1	Length : 19cm, Style : double ended	Anatomic experiment	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
M-81	Syme Dissector Double Ended Blunt /Sharp.	A	1	Length : 19cm, Style : Double ended, sharp/blunt	Anatomic experiment	Basic
M-82	Aneurysm Needle Small	A	1	Length : 18cm, Style : small	Anatomic experiment	Basic
M-83	Syme Aneurysm Needle	A	1	Length : 16cm, Style : blunt	Anatomic experiment	Basic
M-84	Iris Dissecting Forceps, 1x2 teeth, STR	A	1	Length : 10cm, Style : 1x2 teeth	Anatomic experiment	Basic
M-85	Walsgrave Tubing Clamps Box joint. Heavy Pattern	A	1	Length : 18cm, Style : tubing Clamp	Anatomic experiment	Basic
M-86	Giertz Rib Shears	A	1	Length : 27cm, Style : Giertz-stille	Anatomic experiment	Basic
M-87	Thudicum Nasal Speculum, Size 1	A	1	Material : Brass chromium plating	Anatomic experiment	Basic
M-88	Laryngel Mirror Handles	A	1	Length : 9cm	Anatomic experiment	Basic
M-89	Laryngeal Mirror Without Handle	B	2	Length : 12cm	Anatomic experiment	Basic
M-90	Head Mirror, Fibre forehead band	A	1	Style : mirror 8cm	Anatomic experiment	Basic
M-91	Paton Bone Cutting Forceps	A	1	Length : 23cm	Anatomic experiment	Basic
M-92	Toothed Bone Ronguer	A	1	Length : 20cm	Anatomic experiment	Basic
M-93	Satterlee Amputation Saw	A	1	Length : blade 21cm	Anatomic experiment	Basic
M-94	Bristow Periosteal Elevator	A	1	Length : 17cm	Anatomic experiment	Basic
M-95	Mallet, Stainless Steel	A	1	Length : 23cm	Anatomic experiment	Basic
M-96	Eagel Saw	A	1	Length : 14cm	Anatomic experiment	Basic
M-97	Farabeuf Rugine, Chisel Edge Straight End.	A	1	Length : 15cm	Anatomic experiment	Basic
M-98	Pennybacker Probe Dissector, Double Ended	A	1	Length : 17cm	Anatomic experiment	Basic
M-99	Mcindoe Scissors	A	1	Length : 19cm	Anatomic experiment	Basic
M-100	Kilner Scissors	A	1	Length : 11cm	Anatomic experiment	Basic
M-101	Gillies Dissectinf Forceps, 1 x 2 teeth	A	1	Length : 15cm, Style : 1 x 2 teeth	Anatomic experiment	Basic
M-102	Sprague Bowles Stethoscope	A	1	Style : double Head	Training of basic material for examination	XIV-9
M-103	National Hospital Percussion Hamer	A	1	Length : 20cm	Training of basic material for examination	XIV-5
M-104	Medical Saw (Rotary)	A	1	Type : Electrical Motor Drive Handy Type	Anatomic experiment	Basic
M-105	Medical Jig Saw	A	1	Type : Electrical Motor Drive Handy Type	Anatomic experiment	Basic

Pharmacology

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
Audio visual						
A-1b	Mobile TV	F	1	25", Multi System, Moveable Table: III, 200 x 800 x 700mm, Steel Frame with Caster and Holding Strap	Visual efficiency for teaching	Common
A-4	Over- Head Projector	A	1	Aperture Size: A4, Projection Distance: 1.5 - 3 m, Projection Lamp :Halogen	Visual efficiency for teaching by OHP	Common
A-5	Screen (for Projector)	A	1	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x1,800 mm	Screen for Projectors	Common
A-6	Slides Projector	A	1	Circular Tray Type, Projection Slide Size: 2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Common
A-7	Decto-Phone	F	1	Voice Recorder/Player, Recording Media: Magnetic Tape, Recording Time: 1 hr	Voice records of seminar and anatomy experiment	Common
A-8	Tape- Recorder	F	1	Stereo, Frequency Response: 40 -14,000Hz, Built-in Speaker, Power Requirement: DC, Battery and AC	Voice records of seminar and long lecture	Common
A-12	LCD	F	1	Desktop Type, LCD Panel 8.4" (A4), Resolution :640x480 pixels	Visual efficiency for teaching by OHP picture PC treated	Common
Equipment and tools						
E-5	HPLC	F	1	UV-VIS Detector(200 to 900 nm, Accuracy: 1nm), Column Oven, Sample Cooler, Auto Injector	Separation and extraction of lipid hormon, glucose, protein	XV-1
E-6	Gas Chromatography	F	1	Column Oven: to 450 °C, Detector: FID, TCD, FDP, PC, Software	Measuring of steroid hormon, amino acid, anti-epilepsy drug	XV-1
E-9	Double Beam Spec.	A	1	Wave Length 190 - 900nm(Accuracy: 0.3 nm), Photometric System: Double Beam Optics	Measuring for activation of enzyme comparing pre and after drug medication	XV-6
E-32	Emergency Trolley	A	1	Maximum weighing capacity : 120 kg, Height adjustable with handle, Material : Aluminium	Measurement of physique difference in experiment	XV-3
E-49	Heating- Cooling Circulator	A	1	Temperature control range : -20 to +40°C, Circulating Volume: 15 liter/min	Control constant temperature in acute refrigerating	Common
E-50	Centrifuge - Low Speed Bench Top	A	1	Max. speed : 6,000 rpm (3,000xg)	Separation of sample(blood, urine)	XV-7
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +5 ~ 90°C, Bath Capacity: 15 liter	Activation of shaking samples under controlled temperature water	XV-9
E-69	Reverse Osmosis Ultrafiltration Unit	F	1	R/O Filtration System (5 liters /hr), Collection method : Reverse osmosis → Ion-exchange	Preparation for reagent solution with ultrafiltration water	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-92	Bunsen Burner	D	8	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-93	Biological Safety Cabinet	A	1	900x40x800, chemical proof	Preservation of reagent, samples under constant temperature and germ free	Basic
E-95	Flame Photometer	F	1	Measurements element : Li, Na, K, Ca, Measurements range : 0.2 to 15ppm	Spectron analyse of spectron in various element (Na, K) by flame reaction for respiration and metabolism	XV-4
E-96	Incubator	A	1	Air jacket, heat conduction, Capacity: 70 L, Temp: to 70 deg	Cultivation of bacteria and virus and heating sample under constant temperature	XV-9
E-106	Fume- Hood	A	1	Air volume : 20m ³ /min, Dimension : Approx.1,500(W) x 800(D) x 2,300(H)mm, Material: Chemical Register	Ventilation for protecting from poison gas	Basic
E-115	Refrigerator (Home Type)	A	1	200 L, 3 Doors, Home Use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	A	1	Chemical and solvent proof painting,Size: 850×400×800(H)mm	Preservation of reagent	Basic
E-120	Dissecting Microscope	B	2	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Inspection and micro anatomy by microscope for dosing animal tissue	Common
E-121	pH Meter	B	3	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14(Accuracy:0.01pH)	pH level measurement for preparation of reagent and solution	XV-1
E-213	Stop Watch (Interruption Type)	C	4	Analogue type, manual winding, 1 min. /around, interruption	Measurement of reaction time	Basic
E-261	Drug Level Analyser	F	1	Measuring method : FPIA, Number of sample /one batch: Max. 20, Sample	Drug level measurement for monitoring of bioavailability	XV-1,4
E-262	Glass Ware Washer	A	1	Washing method: pressurised water-jet, Size: 100 liters	Wash equipment completely to avoid contamination	Basic
E-263	Tablet Dissolution Tester	A	1	1 Shaft , Rotation speed : ~ 250 rpm, Temp. range RT to 60°C	Measuring reaction time of tablet to dissolve	XV-1
E-264	Tablet Hardness, Thickness Instrument	A	1	Monsant type, Measuring range :0.1 ~ 30kg/cm ²	Measuring of tablet thickness and hardness by compressor	XV-1
E-265	Tablet Control System	A	1	Number of baskets :1 basket, Vertical movement: 30 stroke/min , Temp. range :RT ~ 60°C	Measuring reaction time of tablet to dissolve in target organ	XV-1
E-267	Particle Counter	A	1	Laser particle counter(0.3 to 5.0 micro), Display : LED	Measuring of tablet particle density	XV-1
E-276	Kymograph with Stimulator Set	A	1	Universal Kymograph: Speed range (600 mm/s) Stimulator:24 V, Pulse width (0.05 ~ 5 ms)	Check functional system and monitoring during animal experiment	XV-1

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-278	High Speed Centrifuge	A	1	Max. speed :23,000 rpm(50,000xg)	Separation and extract cellular substance	Basic
E-288	Orbital Shaker	A	1	Rotary Type, Shaking Stroke: 30 mm, Shaking Speed: 200 rpm	Cultivation and sample stirring	Basic
E-290	Micro Centrifuge	A	1	Max. speed :13,000 rpm,(16,000xg)	Separation and extraction for small volume by middle speed centrifugation	XV-5
E-292	Tissue Homogenizer	A	1	Speed range : 27,000rpm, Paddle	Smashing tissue and extraction of cellular substance	Basic
E-296	Multi- teaching Microscopes	C	1	Total Magnification : 40X-1,000X, Halogen light , Multi-viewing : 4 Observers	Group inspection for specimen	Common
E-321	Hematocrit Centrifuge	A	1	Speed 12,000 rpm , Rotor	Separation of small volume (blood) by capillary centrifugation	Basic
E-333	Sphygmomanometer	C	5	Measurement Range: 0 to 300 mmHg, Portable Type, Double Scope	Measurement of blood pressure and examination of respiration after dosing	XV-3
E-334	Weighing Scale	A	1	0 to 100 kg, Flat Type	Measurement of weight of human and animals	Basic
E-341	Refrigerated Table Top Centrifuge	A	1	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction for sample (blood) to sedimentate such as cold agglutinin	XV- 7
E-347	Laminar Flow Hood	A	1	Working Area: 1,500 ×800 mm, Gate Height: 800 mm	Germ free preparation	Basic
E-349	Upright Freezer	A	1	Temp.: -20°C, Cabinet Type:400 liters	Mid-term preservation of reagent and sample	Basic
E-350	ELIZA Reader	A	1	Measurement range : 400~650nm, Light source : Tungsten halogen lamp, 4 size of filters	Diagnosis of drug immuno reaction	XV-10
E-353	Mechanical Stirrer	A	1	Speed: Max. 1,200 rpm, Stand, Bladeand Paddle	Dissolution and mixing of solution	Basic
E-354	Sealer	A	1	Sealing length : 300 mm	Sealing pack for organ tissue preservation from oxidation and degeneration	Basic
E-368	Electrophoresis	A	1	Gel size 80 x 70mm, Power supply unit	Measuring of electro chemical potential gradient for colloid	XV-10
E-377	Hot Plate with Magnetic Stirrer	C	5	Max. Temp. 400°C, Revolution 1300 rpm, Plate Size: 130x130 mm	Dissolution and mixing of solution with heating	Basic
E-388	Pipette Cleaning System	A	1	Capacity: ϕ 130×500mm	Pipette cleaning by ultra sound wave	Basic
E-389	Pipette Set	C	5	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-398	Shaker: Slide Shaker with Semicircular Motion	A	1	Speed : Max. 200 rpm, Orbital: 30 mm, Table Size: 400x400 mm	Flat plate reciprocating shaker for reaction plate glass mixing	Basic
E-403	Thermometer Set	B	3	Range : -70 ~ 50°C	Control constant temperature in refrigerator, water bath	Common
E-405	TLC System	A	1	Size: 20x20 cm (glass)	Eluting of lipid, amino acid	Common

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
E-407	Conical Glass Tube	C	50	Capacity :10, 35, 50ml	Collection of cell and tissue	Basic
E-409	UV Transilluminator	A	1	UV/White light : 360 nm, Portable Type	Diagnosis of electrophoresis gel	XV-10
E-410	Vacuum Pump	A	1	Delivery Speed: 8 liter/ min., Min. Pressure: 550 mmHg	Control of vacuum condition and parts of other equipment	Basic
E-411	Test Tube Mixer	B	3	Mixer, for Test-tube, Revolution range : Max. 2,500rpm	For mixing test tube sample	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bulb, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic

Physiology

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-1a	Fixed Television Set	A	1	32", Multi System, Standing Rack: 111,200 x 800 x 700mm, Steel Frame with Holding Strap	Visual efficiency for teaching by video tape	Common
A-4	Over- Head Projector	A	1	Aperture Size :A4, Projection Distance: 1.5 - 3 m, Projection Lamp : Halogen	Visual efficiency for teaching by OHP	Common
A-5	Screen (for Projector)	A	1	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x1,800 mm	Screen for projectors	Common
A-6	Slides Projector	A	1	Circular Tray Type, Slide Size: 2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Common
A-7	Decto- Phone	F	1	Voice Recorder/Player, Recording Media: Magnetic Tape, Recording Time: 1 hr	Voice records of seminar and anatomy experiment	Common
A-8	Tape-Recorder	F	1	Stereo, Frequency Response: 40 -14000Hz, Built-in Speaker, Power Requirement: DC Battery and AC	Voice records of seminar and long lecture	Common
A-11	Scanner - Color	F	1	Flatbed (Single-pass color and monochrome desktop), Resolution 1200x600 dpi, Scanning Size 216x297 mm	Production and analysis of teaching color materials and photos	Common
A-12	LCD	F	1	Desktop Type, LCD Panel 8.4" (A4), Resolution :640x480 pixels, Color: 2 Million	Visual efficiency for teaching by OHP picture PC treated	Common
A-29	Laser Printer Color	F	1	Color Laser Beam Printer, Print Speed :2-3 spm (color), Resolution 600x300 dpi, Paper Size A4	Duplication and analysis of teaching color materials and photos	Common
A-34	Video Camera	F	1	CCD 800,000 pixel, LCD Color Monitor 3.5", Optical Zoom and Digital Zoom, DV (Digital Video) Format	Recording and production of teaching materials such as anatomic experiment	Common
Experiment and Training Equipment						
E-25	Anatomical Chart	A	1	25 kinds Laminated charts, Poster size(65x50 cm), with holding stand	Study of anatomic whole structure of body	Basic
E-31	Intubation Set	A	1	A realistic for the training of intubation and other airway management. Full scale	Training of endotracheal tube insertion for air conduction	XVI-3
E-48a	Analytical Balance Sensitivity - Five D.P	A	1	Max. capacity : 200g, Readability : 0.1mg, Canopy	Measurement of micro dry chemistry and reagent for making buffer	Basic
E-48b	Analytical Balance Sensitivity - Four D.P	A	1	Max. capacity : 400g, Readability : 0.001g, Canopy	Measurement of dry chemistry and reagent for making buffer	Basic
E-49	Heating- Cooling Circulator	A	1	Temperature control range : -20 to +40°C, Circulating Volume: 15 liters/min	Rapid cooling of reagent and control temperature	Basic
E-50	Centrifuge - Low Speed Bench Top	A	1	Max. speed : 5,500 rpm (3,000xg)	Separation of sample(blood, urine)	Basic
E-59	Ambient Air Analyser	A	1	Portable Type, Pump flow rate: 20 L/min	Measurement of surrounding and existence air in lung	XVI-5

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +10 ~ 80°C, Bath Capacity: 15 liter	Activation of shaking samples under controlled temperature water	Basic
E-78a	Sonicator, Probe	A	1	Frequency : 20 kHz	Scattering and emulsifying tissues by ultra sonic	Basic
E-79	Sound Level Meter	B	2	Audio signal : A / B , Frequency : 20 to 20,000Hz	Stimulation for diagnosis of hearing acuity in peripheral and central nervous disease	XVI-6
E-84	Respiratory System Model	A	1	Full scale, 7 parts	Study of respiratory system	XVI-3
E-85	Digestive System Model	A	1	Full scale, 2 parts	Study of digestive system	XVI-5
E-86	Circulatory System Model	A	1	Relief model. Half scale	Study for blood circulation of body	XVI-2
E-87	Urinary System Model	A	1	2/3 scale	Study of urinary system	XVI-4
E-90	Ear Model	A	1	3 times full scale, 4 parts	Study of auditory system	XVI-6
E-92	Bunsen Burner	C	8	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-93	Biological Safety Cabinet	A	1	900x400x800, chemical proof	Preservation of reagent, samples under constant temperature and germ free	Basic
E-96	Incubator	A	1	Heat conduction, Working temp.: RT ~ 70°C, Capacity: 70 liters	Cultivation of bacteria and virus and heating sample under constant temperature	Basic
E-106	Fume- Hood	A	1	Air volume : 20m ³ /min, Dimension : Approx. 1,500(W) x 800(D) x 2,300(H)mm, Material: Chemical Register	Ventilation of poison gas by negative pressured air	Basic
E-114	Deep Freezer- Cabinet Type (Large)	A	1	- 80°C, Cabinet type, Volume: 450 liter	Long-term preservation of samples	Common
E-115	Refrigerator (Home Type)	A	1	200 L, 3 Doors, Home Use	Mid-term preservation of samples	Common
E-116	Safety Cabinet	A	1	Chemical and solvent proof painting, Size: 850×400×800(H)mm	Preservation of reagent	Basic
E-120	Dissecting Microscope	B	2	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Microscope system with dissecting stage for experimental observation	Basic
E-121	pH Meter	B	3	Glass electrode method, Digital pH/mV, Temp. Display, pH: 0 to 14(Accuracy: 0.01 pH)	pH level measurement for basal metabolism	XVI-3
E-213	Stop Watch (Interruption Type)	C	4	Analogue type, interruption	Measurement of reaction time	XVI-6
E-262	Glass Ware Washer	A	1	Washing method: pressurised water-jet, Capacity: 100 liters	Wash equipment completely to avoid contamination	Basic
E-268	Nitric Oxide Detector	A	1	Portable NO ₂ Indicator, Detective Capacity: ~50ppm	Measuring of nitric oxide density	XVI-9
E-269	Jacket Organ Bath	A	1	Temp. Range: 10 to 80°C, Capacity 20 liter	Rinse out and straightening of organ tissue from animal experiment	Basic
E-271	Animal Operating Set	A	1	Operating Animal: Dog/ Cat/ Monkey/ Rabbit, Table Heater: Electric, Table Size: 600x900x900, Weighing Scale	For animal experiment, operation table	Basic

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
E-274	Rat Holder	A	2	Material :Metal, Size : 100 x 240 x 150mm	Capture device for animal (rat) experiment	Basic
E-275	Cat Holder	A	2	Material :SUS, Size : 300 x 850 x 100mm	Capture device for animal (cat) experiment	Basic
E-276	Kymograph with Stimulator Set	A	1	Universal Kymograph: Speed range (600 mm/s) Stimulator: 24 V Output, Pulse width (0.05 ~5 ms)	For animal experiment, check system of blood pressure measurement	XVI-6
E-278	High Speed Centrifuge	A	1	Max. speed :25,000 rpm(50,000xg)	Separation and extraction of mitochondria demarcation level by middle speed centrifugation	Basic
E-287	Oven	A	1	Forced air-circulation type, Working temperature :~ 250°C, Capacity : 10 litter	Sterilisation by dry heating for metal, glass, ceramic ware and dry chemistry	Basic
E-288	Orbital Shaker	A	1	Rotary Type, Shaking Stroke: 30 mm , 200 rpm	Cultivation and sample stirring	Basic
E-290	Micro Centrifuge	A	1	Max. speed :13,000 rpm (16,000xg)	Separation and extraction for small volume by middle speed centrifugation	Basic
E-291	Blood Gas Analyser	F	1	Measured Parameters (pH :6.00 to 8.00, PCO ₂ :4 to 200 mmHg, PO ₂ :0 to 740 mmHg, Barometric pressure :300 to 800 mmHg)	Measuring various blood gas levels and metabolic acidosis, alkalosis	XVI-2, 3
E-292	Tissue Homogrnizer	A	1	Speed range :27,000rpm, Paddle	Smashing tissue and extraction of cellular substance	Basic
E-298	Staining Set	B	2	Staining jar : Glass made, Staining basket :Stainless steel made	Manual staining system to make specimens from animal experiments	Basic
E-303	Multi Channel Recorder Electrocardiograph	C	4	12 Channel, Paper Speed: Max. 50mm/s, Leak Current: less than 20 μ A	Operating and understanding of ECG and its mechanism	XVI-2
E-305	Resuscitation Unit	B	2	Pressure : Adult 0 to 50 cm H ₂ O/ Infant 0 to 30 cm H ₂ O, Suction pressure of aspirator : - 200mmHg, Oxygen Cylinder \times 2	Operating and understanding for resuscitation	XVI-3
E-307	Kymograph with Basic Stimulator Set	A	1	Output: 1.0 to 10 mA DC Pulse, Output Type: Interval 5ms to 5 sec., 1 Channel	Measuring for action potential of muscle contraction by activation current	XVI-2
E-308	Hemodynamic Measuring System	A	1	Flow rate measuring range : 0.2mL/min. to 19.99L/min.,	Measuring of blood pressure by catheter for animal experiment	XVI-2
E-310	Inverted Microscope	F	2	Total Magnification :Max. 640x, Filter: Red, Green, Yellow, Grey	Observation of organic cells on microscopes	Common
E-311	Micro Manipulator	B	2	Joy Stick Type, Travel: X-axis, Y-axis, Z-axis, 3.5 x 1.5 x 2.5 cm	treatment of biopsy observation on microscopes	Common
E-313	Axopatch Amplifier	B	3	Output: \pm 5V, Leaking Current: \pm 10pA	Amplifying body epithelium electricity	XVI-6

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-314	Electrical Stimulator Set	A	1	Dual Impedance Stimulator, Output Type: Direct/ Pulse (1 to 10mA)	Basic training for nerve conduction velocity and operating EMG by student	XVI-6
E-315	Oscilloscope	B	3	Band: DC 100 MHz, Channel: 3, Sencitivity: 1mV to 5 V	Measurement of active pulse in animal experiment	XVI-6
E-318	Tissue Slicer (Chopper)	A	1	Thickness: 10 μ	Block cutting tissues for preparation for making slide specimen	Basic
E-321	Hematocrit Centrifuge	A	1	Speed 12,000 rpm , Rotor	Simulation of basal metabolism and operating spirometer by student	XVI-4,7
E-323	Spirometer Set	A	1	Recording Spirometer: 10 litter	Training of basal metabolism and operating spirometer by student	XVI-3
E-325	Cycle Ergometer	C	6	Exercise Cycle, Speed Display (km/h), Total Distance (km)	Training for load respiratory examination by bicycle	XVI-3
E-326	Gas (Volume) Meter	B	2	Measuring Range: 5,000 litter	Examination of respiratory function test	XVI-3
E-327	CO ₂ Meter	B	2	Measuring Range: 0 to 10 %, Handy Type	Gas control for examination of respiratory function test	XVI-3
E-328	O ₂ Meter	B	2	Measuring Range: 0 to 100%, Accuracy: 2.0 %	Gas control for examination of respiratory function test	XVI-3
E-330	Douglas Bag	D	10	Capacity: 250 litter, Connecting: Tubing Type	Examination of respiratory function test	XVI-3
E-331	Flexible Tube	E	20	Material: Soft Resin, Length: 1,000mm, 30 mm dia.	Examination of respiratory function test	XVI-3
E-333	Sphygmomanometer	G	35	Measurement Range: 0 to 300 mmHg, Portable Type, Double Scope	Training of sphygmomanometer and stethoscope for blood pressure measurement	Basic
E-334	Weighing Scale	A	1	0 to 100 kg, Flat Type	Measurement of weight of human and animals	Basic
E-335	Tread Mill	A	1	Running Speed : 0 to 8 km/h	Training for load ECG examination by running	XVI-1
E-336	Recorder Multichannel	B	2	Multi Channel Chart Recorder, ECG, EMG, EOG, EEG	Recording of cardio functional examination	XVI-1,2
E-341	Refrigerated Table Top Centrifuge	A	1	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction for sample (blood) to sedimentate such as cold agglutinin	XVI-2
E-347	Laminar Flow Hood	A	1	Working Area: 1,500 \times 800 mm, Gate Height: 800 mm	Germ free preparation	Basic
E-349	Upright Freezer	A	1	Temp.: - 20°C, Cabinet Type: 400 liters	Mid-term preservation of reagent and sample	Basic
E-353	Mechanical Stirrer	B	2	Speed: Max. 1,200 rpm, Stand, Blade and Paddle	Dissolution and mixing of solution	Basic
E-361	Counter: Manual White Blood Cell Differential	D	8	Mechanical Type, 8 Keys	Counter for blood cell and cerebrospinal fluid	XVI-9
E-371	Fibrometer	A	1	Capacity: 50 Samples, Sample: 50 μ L, Mesuring No.:7	Measurement of cellose in blood	XVI-1
E-375	Hematocytometer Set	D	8	Thoma ruling, Fuchs-Rosenthal	Blood cell counter plate for microscope observation by Toma and Fuchs-Rosenthal method	XVI-9

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
E-377	Hot Plate with Magnetic Stirrer	B	3	Max. Temp. 400°C, Revolution 1,300 rpm, Plate Size: 130x130 mm	Dissolution and mixing of solution with heating	Basic
E-388	Pipette Cleaning System	A	1	Capacity: ϕ 130x500mm	Pipette cleaning by ultra sound wave	Basic
E-389	Pipette Set	C	5	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-403	Thermometer	B	2	Range : -70 ~ 50°C, Overall length : Approx. 300mm	Control constant temperature in refrigerator, water bath	Basic
E-407	Conical Glass Tube	C	50	Capacity : 10, 35, 50ml	Spits form for collecting sediment of urine	Basic
E-408	Urinometer	E	14	Portable Type, Urine Range: 12 g/ 100 mL	Measuring of component in urine sample by refraction	XVI-4
E-410	Vacuum Pump	A	1	Delivery Speed: 8 liter/ min., Vacuum Pressure: 500 mmHg	Adjustment of vacuum condition for experiment and parts of other equipment	Basic
E-411	Test Tube Mixer	B	3	Mixer for Test-tub, Revolution range : Max. 2,500rpm	For mixing test tube sample	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic
Anatomic Models						
M-6	Advanced Medical Turso(28part)	A	1	Upper body	Study of general organs	XVI-1
M-13	Eye in Orbit	A	1	4 times Scale	Study of visual function	XVI-6
M-16	Brain 4 parts	A	1	Full Scale	Study of head and neck function and neuron system	XVI-6
M-21	De-Luxe Heart-7 part	A	1	Full Scale	Study of blood circulation	XVI-2
M-22	Basic Heart- 1 part	A	1	Full Scale with Stand	Study of blood circulation	XVI-2
M-24	Heart with Oesophagus Aorta Windpipe	A	1	2 times model	Study of heart function	XVI-2
M-25	Heart with Thymus - 3 parts	A	1	3/4 times Scale	Study of heart function	XVI-2
M-26	Lung -5 parts	A	1	Half Scale	Study of respiratory system	XVI-3
M-27	Digestive System-3 parts	A	1	Full Scale	Study of digestion system	XVI-5
M-28/29	Stomach with Duodenum + Pancreas 3 parts	A	1	Layers of stomach wall, lower part of esophagus near, cardiac portion of stomach, upper part of duodenum, vessels and nervus, Full Scale	Study of digestion system	XVI-5
M-31	Liver with Gall Blander	A	1	Full Scale	Study of digestion system	XVI-5
M-34	Liver with Gall Blander, Pancreas and Duodenum	A	1	Full Scale	Study of digestion system	XVI-5
M-36	Kidney Nephrons Blood Vessel, Renal corpuscle	A	1	3, 120, 700 Times Scale, with Stand	Study of uric system	XVI-4
M-38	Complete Urinary System, Dual Sex 6 parts	A	1	Both Sex, Full Scale	Study of reproduction, urinary system	XVI-4
M-40	Female Pelvis-2 parts	A	1	Female Model, Full Scale	Study of female reproduction, urinary system	XVI-8
M-41	Male Pelvis-2 parts	A	1	Male Model, Full Scale	Study of male reproduction, urinary system	XVI-8
Physiology Teaching & Research						
K-2	Pulmometer	C	6	Capacity: 7,000 ml	Study of principle function by basic respiratory test	Basic

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
K-3	Reaction Timer	C	6	Response Time: 0.01 sec., Digital Display, Flashing Color: Red	Measurement of reaction time	Basic
K-24	Rats Ventilator	B	2	Applicable animals: Rat, Air Delivery: 10 ml, Ventilating: Max. 150 times/min.	Life support system on animal	Basic
COMPLETE DISSECTING SET FOR MEDICAL STUDENTS						
K-27	Stainless Steel Instrument Case	E	15	Size: 300×250×75 mm, Material: Stainless Steel	Ordering and protecting operational equipment	Basic
K-28	Gross Anatomy Probe	E	15	Length: 14 cm	Animal experiment	Basic
K-29	Bull Dog Clamps (Slight Curve)	G	30	Style: Curved, 5 cm	Animal experiment	Basic
K-30	Arm Retractor	E	15	Material: Stainless Steel, Length: 10 cm	Animal experiment	Basic
K-31	Fine Iris Scissors	E	15	Length: 11 cm, Style: Straight	Animal experiment	Basic
K-32	Standard Surgical Scissors	E	15	Length: 14 cm, Style: curved sharp/blunt	Animal experiment	Basic
K-33	Scissors	E	15	Length: 18 cm, Style: Tough cut straight, sharp/blunt	Animal experiment	Basic
K-34	Hemostatic Forceps, Cur.	E	15	Length: 14 cm, Style: curved with teeth	Animal experiment	Basic
K-35	Hemostatic Forceps, Str.	E	15	Length: 14 cm, Style: straight with teeth	Animal experiment	Basic
K-36	Michel Suture Applicator	E	15	Length: 12 cm	Animal experiment	Basic
K-37	Michel Suture Clips	E	15	Size: 11 x 2 mm	Animal experiment	Basic
K-38	Spatula	E	15	Length: 16 cm, Style: Combination probe and spatula (double ended)	Animal experiment	Basic
K-39	Scalpel Handles 3 Solid	E	15	Length: 12 cm, Style: B.P NO. 3	Animal experiment	Basic
K-40	Scalpel Handles 4 Solid	E	15	Length: 12 cm, Style: B.P NO. 4	Animal experiment	Basic
K-41	Blades for Scalpel for 3 Solid	E	15	Style: No. 10, No. 11, No. 12, No. 15, Q'ty of blade in one box: 100 blades	Animal experiment	Basic
K-42	Blades for Scalpel for 4 Solid	E	15	Style: No. 20, No. 21, No. 22, No. 23, Q'ty of blade in one box: 100 blades	Animal experiment	Basic
K-43	Narrow Pattern Dressing Forceps, Str. 12 cm	E	15	Length: 12 cm, Style: Narrow pattern, with serrated tips, straight	Animal experiment	Basic
K-44	Narrow Pattern Dressing Forceps, Str. 16 cm	E	15	Length: 16 cm, Style: Narrow pattern, with serrated tips, straight	Animal experiment	Basic
K-45	Narrow Pattern Dressing Forceps, Curved 12 cm	E	15	Length: 12 cm, Style: Narrow pattern, with serrated tips, curved	Animal experiment	Basic
K-46	Narrow Pattern Dressing Forceps, Curved 16 cm	E	15	Length: 16 cm, Style: Narrow pattern, with serrated tips, straight	Animal experiment	Basic
K-48	Microscope Tissue Chamber	A	1	Chamber Capacity: 4 150, Temperature Control	Expansion of tissue from animal experiment	XVI-9
K-49	Precision Stereo Zoom Microscope and Optional Zoom Stand	A	1	Eyepiece: 10, 20×, Objective: 2×, Zooming: 0.7 to 4×	Observation of tissue from animal experiment	XVI-8
ELECTROPHYSIOLOGY						
K-54	High Performance Physiograph with Different Transducers for Measuring ECG, EEG, EMG, BR and HR	A	1	Channel: 4, Paper Feeding Speed: Max. 100 mm/s	Measurement of active pulse in animal experiment	XVI-6

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
SYSTEMATIC PHYSIOLOGY						
K-70	Lab-Animal Exercise Set	A	1	Microwave fixation, Oxygen Monitor, Monitor of animal ambulatory activity, Water and food consumption recorder, Rotation behaviour counter	Measurement of active pulse of encephalal, cardiac function in animal experiment	XVI-6
K-76	Isolated Organ Bath	A	1	Muscle chamber bath x 2, Flatbed recorder x 1, Bath size : 450 x 200 x 200mm	Study of the reaction by electric or dosing stimulation under isolated constant temperature environment	Basic

Forensic Medicine

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-1a	Fixed Television Set	A	1	32", Multi System, Standing Rack: H1,200 x 800 x 700mm, Steel Frame with Holding Strap	Visual efficiency for teaching by video tape	Common
A-4	Over- Head Projector	A	1	Aperture Size:A4, Projection Distance:1.5 - 3 m, Projection Lamp : Halogen	Visual efficiency for teaching by OHP	Common
A-5	Screen (for Projector)	A	1	Manual Roll Up, Ceiling or Wall Mount, Screen Size 1,800x1,800 mm	Screen for projectors	Common
A-6	Slides Projector	A	1	Circular Tray Type, Slide Size:2x2 Mount Slide, Remote Controller	Visual efficiency for teaching by hand made slides	Common
A-7	Decto- Phone	F	1	Voice Recorder/Player, Recording Media: Magnetic Tape, Recording time: 1 hr	Voice records of seminar and anatomy experiment	Common
A-8	Tape- Recorder	F	1	Stereo, Frequency Response: 40 -14,000Hz, Built-in Speaker, Power Requirement: DC Battery and AC	Voice records of seminar and long lecture	Common
A-11	Scanner - Color	F	1	Flatbed (Single-pass color and monochrome desktop), Resolution 1,200x600 dpi, Scanning Size 216x297 mm	Production and analysis of teaching color materials and photos	Common
A-12	LCD	F	1	Desktop Type, LCD Panel 8.4" (A4), Resolution :640x480 pixels	Visual efficiency for teaching by OHP picture PC treated	Common
A-35	Camera with Zoom Lenses	F	1	35 mm Camera, Auto-focus/manual, Shutter Speed: 30 to 1/2,000, Speed Light, 35 -105 Zoom Lens, Camera Bag, Tripod	Making a film of samples and medical treatments for experiment	Common
Experiment and Training Equipment						
E-2	Deep Freezer	F	1	Temp. Control Range: -80 to RT, Capacity: 180 liter, Chest Type	Long term preservation of samples(micro-creature, blood, tissue, cell-culture)	Basic
E-4	Big Size Autoclave	F	1	100 L, Sterilising Temp. 105 - 135 °C	Sterilisation for spore	Basic
E-5	HPLC	F	1	UV-VIS Detector(200 to 900 nm), Column Oven, Sample Cooler, Auto Injector	Separation and extraction of lipid hormon, glucose, protein	XVII-1,2,6
E-9	Double Beam Spec.	A	1	Wave Length 190 - 900nm, Photometric System: Double Beam Optics	Measuring for activation of enzyme, hormon for search of cause of death	XVII-2,6
E-32	Emergency Trolley	A	1	Maximum weighing capacity : 120 kg,Height adjustable with handle, Material : Aluminium	Measurement of physique difference in experiment	XVII-2
E-48a	Analytical Balance Sensitivity - Five D.P	A	1	Max. capacity : 200g, Readability : 0.1mg, Canopy	Measurement of micro dry chemistry and reagent for making buffer	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-48b	Analytical Balance Sensitivity - Four D.P	A	1	Max. capacity : 400g, Readability : 0.001g, Canopy	Measurement of dry chemistry and reagent for making buffer	Basic
E-49	Heating- Cooling Circulator	B	2	Temperature control range : -20 to +40°C, Circulating Volume: 15 liters/min	Rapid cooling of reagent and control temperature	Basic
E-50	Centrifuge - Low Speed Bench Top	A	1	Max. speed : 6,000 rpm(3,000xg)	Separation of sample (blood, urine)	Basic
E-59	Ambient Air Analyser	A	1	Portable Type, Pump flow rate: 20 L/min.	Measurement of surrounding and existence air in lung	XVII-4
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +5 ~ 90°C, Bath Capacity: 15 liter	Activation of shaking samples under controlled temperature water	Basic
E-92	Bunsen Burner	C	4	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-93	Biological Safety Cabinet	A	1	900x400x800, chemical proof	Preservation of reagent, samples under constant temperature and germ free	Basic
E-95	Flame Photometer	F	1	Measurements element : Li, Na, K, Ca, Measurements range : 0.2 to 15ppm	Spectra analyse of existing drug spectra in various element	XVII-1,2,6
E-96	Incubator	A	1	Air jacket, heat conduction, Working temp. : Room temp. RT ~ 70°C, Capacity: 70 liters	Cultivation of bacteria and virus and heating sample under constant temperature	Basic
E-98	Rotary Microtome	A	1	Section thickness : From 2 to 20 microns , Manual	Cutting paraffin tissue gradually in various thickness for microscope observation	Basic
E-99	Sledge Type Microtome	A	1	From 0.5 to 12 micron , Manual	Cutting soft paraffin tissue in various thickness for microscope observation	Basic
E-101	Floating Out Bath for Paraffin Sections	A	1	Bath Volume: 9 liter, Setting temp. : 20 ~ 70°C	Flattening out wrinkled paraffin sections by heating	Basic
E-102	Tissue Processor	A	1	Station system, Glass beaker: 12 pcs, Paraffin pot : 2 pcs	Automatic embedding in sealed container	Basic
E-104	Embedding Center	A	1	Paraffin tank capacity : 2 litter, Temp. range : 50 ~ 70°C, Hot Plate, Paraffin Warmer	Manual embedding in each process (hydration, de-fat, refill)	Basic
E-106	Fume- Hood	B	2	Air volume : 20m ³ /min, Dimension : Approx. 1,500(W) x 800(D) x 2,300(H)mm, Material: Chemical Resistor	Germ free environmental work space by negative pressured air	Basic
E-113	Automatic Stainer	F	1	Slide capacity per batch : 12	Automatic staining of HE- stain or Papanicolaou-stain for cytodiagnosis	Basic
E-115	Refrigerator (Home Type)	A	1	200 L, 3 Doors, Home Use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	A	1	Chemical and solvent proof painting, Size: 850×400× 800(H)mm	Preservation of reagent	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-120	Dissecting Microscope	B	2	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Microscope system with dissecting stage for experimental observation	Common
E-121	pH Meter	B	1	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14(Accuracy: 0.01 pH)	pH level measurement for preparation of reagent and solution	Basic
E-213	Stop Watch (Interruption Type)	B	2	Analogue type, 1 min./around, interruption,	Measurement of reaction time	Basic
E-269	Jacket Organ Bath	B	2	Temp. Range: 10 to 80°C, Capacity: 20 liters	Rinse out and straightening of organ tissue	Basic
E-296	Multi- Teaching Microscopes	C	1	Total Magnification : 40X-1,000X, Halogen light, Multi-viewing : 4 Observers	Central control observation system for microscope	Common
E-298	Staining Set	B	2	Staining jar : Glass made, Staining basket :Stainless steel made	Manual staining system to understand HE-stain process for pathologic specimens	Basic
E-321	Hematocrit Centrifuge	A	1	Speed 12,000 rpm , Rotor	Separation of small volume by capillary centrifugation	Basic
E-341	Refrigerated Table Top Centrifuge	B	2	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction for sample (blood) to sedimentate such as cold agglutinin	Basic
E-345	PCR Thermal Cycler	A	1	Sample Capacity : up to 96, Temperature range : max. 99°C	Detection of specific virus gene by DNA synthesis in PCR method	XVII-4
E-349	Upright Freezer	A	1	Temp. : -10 -- - 20°C, Cabinet Type: 400 liters	Mid-term preservation of reagent and sample	Basic
E-350	ELIZA Reader	A	1	Measurement range : 400~650nm, Light source : Tungsten halogen lamp, 4 size of filters	Diagnosis of existing poison by enzyme immuno assay method	XVII-6
E-353	Mechanical Stirrer	A	1	Speed: Max. 1,200 rpm, Stand, Blade and Paddle	Dissolution and mixing of solution	Basic
E-361	Counter: Manual white Blood Cell Differential	A	1	Mechanical Type, 8 Keys	Counter for blood cell and cerebrospinal fluid	XVII-3
E-368	Electrophoresis	A	1	Gel size 80 x 70mm, Power supply unit	Measuring of electro chemical potential gradient for protein	XVII-6
E-375	Hematocytometer Set	A	1	Thoma ruling: Ruling, Fuchs-Rosenthal	Blood cell counter plate for microscope observation by Toma and Fuchs-Rosenthal method	XVII-3
E-376	Hetovac Centrifuge	A	1	Rotation Speed: 1,300 rpm, Temp.: 60 deg	Separation of blood	Basic

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
E-377	Hot Plate with Magnetic Stirrer	C	4	Max. Temp. 400°C, Revolution 1,300 rpm, Plate Size: 130x130mm	Dissolution and mixing of solution with heating	Basic
E-382	Mixer: Blood Tube	A	1	Rotation speed :30 rpm, No. of Roller:5	Rolling mixing of whole blood sample for preventing coagulation	Basic
E-388	Pipette Cleaning System	A	1	Capacity: ϕ 130 X 500mm, Water Volume: Max. 5 liter	Pipette cleaning by ultra sound wave	Basic
E-389	Pipette Set	C	5	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-396	Selective Ion Electrodes: Na ⁺ , K ⁺ , NH ₄ ⁺ , NO ₃ ⁻ , CO ₃ ²⁻ , CO	C	6	Electrode with main body	Measurement of pH degree in solution by each ion electrode	XVII-2
E-398	Shaker: slide Shaker with Semicircular Motion	A	1	Speed : Max. 200 rpm, Orbital: 30 mm	Flat plate reciprocating shaker for reaction plate glass mixing	Basic
E-399	Slide Shaker	A	1	Variable Speed: Max. 250 rpm	Flat plate shaker for reaction plate glass mixing	Basic
E-408	Urinometer	A	1	Portable Type, Urine Range: 1.33 to 1.35	Measuring of component in urine sample by refraction	XVII-6
E-409	UV Transilluminator	A	1	UV/White light: 360 nm, Portable Type	Diagnosis of electrophoresis gel by UV illumination	XVII-6
E-410	Vacuum Pump	A	1	Delivery Speed: 8 liter/ min., Vacuum Pressure: 550 mmHg	Suction to vacuum environment for experiment	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic
Anatomic Models						
SCISSORS						
M-47	Dressing Scissors	A	1	Length : 14cm, Straight blunt / blunt	Anatomic experiment	Basic
M-48	Sharp-Str. 14cm	A	1	Length: 14 cm, Straight sharp/sharp	Anatomic experiment	Basic
M-49	Sharp-Str. 18cm	A	1	Length : 18cm, Straight sharp / sharp	Anatomic experiment	Basic
M-51	Mayo Scissors flat blades Str.	A	1	Length 14 cm, Straight	Anatomic experiment	Basic
M-52	Metzenbaum Scissors Str.	A	1	Length 14 cm, Straight	Anatomic experiment	Basic
DISSECTING FORCEPS						
M-54	Dissecting Forceps Block End	A	1	Length : 13cm, Style : 1x2 teeth	Anatomic experiment	Basic
M-57	Bonney Dissecting Forceps 1x2 Teeth	A	1	Length : 15 cm, Style : 1x2 teeth	Anatomic experiment	Basic
ARTERY FORCEPS						
M-60	Kilner Artery Forceps	A	1	Length : 14 cm, Style : without teeth, curved	Anatomic experiment	Basic
M-61	Serrated Scalpel Handle No.3	A	1	Length : 14cm, Style : without teeth, curved	Anatomic experiment	Basic
M-62	Spencer Wells Artery Forceps Serrated	A	1	Length : 20cm, Style : without teeth, straight	Anatomic experiment	Basic
SCALPEL						
M-70	B.P. Standard Scalpel Handle No.3	A	1	Length : 12cm, Style : B.P NO. 3	Anatomic experiment	Basic
M-71	B.P Standard Scalpel Handle No. 4	A	1	Length : 12cm, Style : B.P NO. 4	Anatomic experiment	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
BLADE						
M-73	Blade No.10	A	1	Material : Stainless steel, Style : No. 10	Anatomic experiment	Basic
M-74	Blade No.15	B	2	Material : steel blade, Style : No. 15	Anatomic experiment	Basic
M-75	Blade No.20	A	1	Material : Stainless steel, Style : No. 20	Anatomic experiment	Basic
M-76	Blade No.21	A	1	Material : Stainless steel, Style : No. 21	Anatomic experiment	Basic
M-77	Blade No.23	A	1	Material : Stainless steel, Style : No. 23	Anatomic experiment	Basic
M-78	Blade No.24	A	1	Material : Stainless steel, Style : No. 24	Anatomic experiment	Basic
M-81	Syme Dissector Double Ended Blunt /Sharp.	A	1	Length : 19cm, Style : Double ended, sharp/blunt	Anatomic experiment	Basic
M-85	Walsgrave Tubing Clamps Box Joint. Heavy Pattern	A	1	Length : 18cm, Style : tubing Clamp	Anatomic experiment	Basic
M-89	Laryngeal Mirror Without Handle	A	1	Length : 12cm	Anatomic experiment	Basic
M-102	Sprague Bowles Stethoscope	A	1	Style : double Head	Anatomic experiment	Basic
M-103	National Hospital Percussion Hammer	A	1	Length : 20cm, Style	Anatomic experiment	Basic

Biochemistry

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-12	LCD	F	1	Desktop Type, LCD Panel 8.4" (A4), Resolution : 640x480 pixels	Visual efficiency for teaching by OHP picture PC treated	Common
Experiment and Training Equipment						
E-2	Deep Freezer	F	1	Temp. Control Range: -80 to RT, Capacity: 180 liter, Chest Type	Long term preservation of samples(micro-creature, blood, tissue, cell-culture)	Basic
E-4	Medium Size Autoclave	F	1	50 L, Automatic Operation, Sterilising Temp. 105 - 135°C	Sterilisation for equipment	Basic
E-9	Double Beam Spec.	B	1	Wave Length 190 - 900nm(Accuracy: 0.3 nm), Photometric System: Double Beam Optics	Measuring for activation of enzyme(GOT, GPT, ALP, γ GTP, LDH, TP)	V-7
E-12	Lyophilizer	F	1	Temp of cold trap : -50°C, Ice holding capacity :1.5 L/batch	Freeze dry of samples for long term preservation	V-7
E-13	DNA Sequencer	F	1	Wave Length 520 - 650 nm, Sample No.: Max 48	searching for base arrangement	V-14,17
E-15	Ultra Centrifuge	F	1	80,000 rpm, Max., Refrigeration System	Separation of virus and extraction of cellular substance(cell nucleus, mitochondria, ribosome),protein, enzyme, nucleic acid	V-14
E-49	Heating- Cooling Circulator	B	2	Temperature control range : -20 to +40°C, Circulating Volume: 15 liters / min	Rapid cooling of reagent and control temperature	IV-9
E-50	Centrifuge -Low Speed Bench Top	B	2	Max. speed : 5,500 rpm (3,000xg)	Separation of sample to clear layer and precipitation	V-12
E-51	Distillator	F	1	Processing: Ion-Exchange - Distillation(4 liters/hr)	Production of distillation water for preparation of reagent	Basic
E-52	Sonicator	A	1	Desktop type Ultrasonic Cleaner, Tank Capacity: 3 liter, Frequency: 20 to 45 Hz	Cleaning and sanitation for glass, metal equipment by ultra sound wave	Basic
E-57	Top Load Balance	A	1	Max. capacity : 4,000g	Measurement of reagent	Basic
E-60a	Water Bath (Regular Type)	A	1	Temperature setting range : +5~90°C, Bath Capacity: 15 liter	Activation of shaking samples under controlled temperature water	Basic
E-60b	Water Bath (Shaking Type)	A	1	Reciprocating shaking system, Capacity: 15 liter, Temp.+10 to 80°C	Activation of samples under controlled temperature water	V-8
E-69	Reverse Osmosis Ultrafiltration Unit	F	1	R/O Filtration System (5 liters/hr), Collection method : Reverse osmosis \rightarrow Ion-exchange	Ultrafiltration water (organic, acid, base are removed) for sensitive experiment	Basic
E-77	Tray Drier	F	1	Ducted Air Flow Drying Type, Duct Area: 300 \times 300mm,Heating System: Electric Heater, Weighing: 3 kg	Gel dryer for electrophoresis test	Basic
E-78a	Sonicator, Probe	A	1	Frequency : 20kHz	Scattering and emulsifying tissues by ultra sonic	Basic

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-92	Bunsen Burner	D	8	Butane gas, 120mm Height, 1 m Rubber hose and safety bands	Heating and sanitation	Basic
E-108	Binocular Microscope for Students Plan	E	15	Total Magnification : 40X-1,000X, Binocular Microscope : Built-in Halogen Illumination for transmitted light	Observation of slide samples	Common
E-109	CO ₂ Incubator	F	1	Air jacket type, Effective capacity :150 Litter, Temperature range :Ambient temp. +5 ~ 50°C	Erobie cultivation of bacteria in CO ₂ gas circumstance for unsealed ware	V-18
E-113	Automatic Stainer	F	1	Slide capacity per batch : 12	Automatic quick staining for cytodiagnosis	Basic
E-114	Deep Freezer- Cabinet Type (Large)	A	1	- 80°C, Cabinet type, Volume: 450 litter	Long-term preservation of samples	Basic
E-115	Refrigerator (Home Type)	A	1	200 L,3 Doors, Home Use	Mid-term preservation of samples	Basic
E-116	Safety Cabinet	A	1	Chemical and solvent proof painting, Size: 850×400×800(H)mm	Preservation of reagent	Basic
E-118	Teaching Microscope with Television Video Output via Camera - 3CCD Plan Apochromat Objectives Plan	F	1	Total Magnification : 40X-1,000X, Built-in halogen light, Multi-purpose 3-CCD camera for versatile video applications, Video system	Slide teaching assistant system for microscope with CCD camera	Common
E-120	Dissecting Microscope	C	4	Total Magnification : 10X-60X, Stereomicroscope, Light source: halogen bulb	Microscope system with dissecting stage for experimental observation	Common
E-121	pH Meter	B	3	Glass electrode method, Digital pH/mV, Temp. Display, pH:0 to 14 (Accuracy: 0.01pH)	pH level measurement for preparation of reagent and solution	Basic
E-213	Stop Watch (Interruption Type)	C	4	Analogue type, manual winding, 1 min. /around, interruption	Measurement of reaction time	Basic
E-262	Glass Ware Washer	A	1	Washing method: pressurised water-jet, Capacity : 100 litters	Wash equipment completely to avoid contamination	Basic
E-278	High Speed Centrifuge	A	1	Max. speed :23,000 rpm (50,000xg)	Separation and extraction of cell sample	V-14
E-287	Oven	A	1	Forced air-circulation type, Working temperature : RT to 250°C, Capacity : 10 litters	Sterilisation by dry heating for metal, glass, ceramic ware and dry chemistry	Basic
E-288	Orbital Shaker	A	1	Rotary Type, Shaking Stroke: 30 mm, Shaking Speed: 200 times/min.	Cultivation and sample stirring	Basic
E-290	Micro Centrifuge	A	1	Max. speed :13,000 rpm (16,000xg)	Separation and extraction for small volume by middle speed centrifugation	V-14

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-299	X-Ray Film Illuminator	A	1	Wall mount type, Large size (H1500xW1,200 mm)	Observation of the relation between injury part and enzyme activation	Basic
E-321	Hematocrit Centrifuge	A	1	Speed 12,000 rpm, Rotor	Separation of small volume by capillary centrifugation	V-12
E-341	Refrigerated Table Top Centrifuge	A	1	Max. Speed 13,000 rpm, Table Top Refrigerator Type	Separation and extraction for sample protecting from denaturation	V-12
E-342	Pulsed Field Gel Electrophoresis System	A	1	Max. Input Current: 500mA, Interval Time: 0.1 s	Measurement of protein isozymes	V-9
E-345	PCR Thermal Cycler	A	1	Sample Capacity : up to 96, Temperature range : Max. 99°C, Software operation	Detection of specific virus gene by DNA synthesis in PCR method	V-14,17
E-347	Laminar Flow Hood	A	1	Working Area: 1,500 X 800 mm, Gate Height: 800 mm	Study of principle of germ free operation	Basic
E-349	Upright Freezer	A	1	Temp.: - 20°C, Cabinet Type: 400 liters	Mid-term preservation of reagent and sample	Basic
E-350	ELIZA Reader	A	1	Measurement range : 400~650nm, Light source : Tungsten halogen lamp, 4 size of filters	Measuring of electro chemical potential gradient for protein	V-6
E-353	Mechanical Stirrer	A	1	Speed: Max. 1,200 rpm, Stand, Blade and Paddle	Dissolution and mixing of solid	Basic
E-359	Gel Documentation Reader	A	1	CCD Camera, Dark Field Box, PC, Resolution: 750x600 pix	Structural analysis of DNA section	V-14,17
E-362	Cryogenic Tank / Incubator	A	1	Insulated Container (Liquid Nitrogen), Capacity: 4 (10 days), 10(45 days), 25(100 days), 35(150 days) liters	Container of liquid nitrogen	Basic
E-365	Cuvette Waster	A	1	Ultrasonic cleaning system, Tank capacity : 200~500 Tubes	Cleaning for plastic micro tube with detergent	Basic
E-366	Densitometer : for Gel	A	1	Measuring Type: Beam Type, Lump Source: Tungsten, Measuring Area: 190X190 mm	Cleaning for plastic micro tube and cuvette	V-9
E-367	Dispenser	A	1	Capacity : 0 to 2.5ml, 1 to 10ml	Measurement of liquid density	Basic
E-368	Electrophoresis	B	2	Gel size 80 x 70mm, Power supply unit	Measuring of electro chemical potential gradient for DNA, RNA and protein	V-17
E-376	Hetovac Centrifuge	A	1	Speed: ,1300 rpm, Temp.: 60 deg	Separation of blood	V-12
E-377	Hot Plate with Magnetic Stirrer	C	4	Max. Temp. 400°C, Revolution 1,300 rpm, Plat Size: 130x130 mm	Dissolution and mixing of solution with heating	Basic
E-379	Incubator: Shaking	A	1	Temp.: max. 60 °C, Size: 300x300 mm	Cultivation and activation of sample under shaking and constant temperature	Basic
E-383	Nephelometer	B	2	Turgidity Range: 0 to 99.9 NTU	Chemical analysis of urine components	V-3
E-387	Phospholipid Analyzer	A	1	Measuring Range: 5 ~ 600 ppb	Mass measurement of phospholipid	V-6

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
E-388	Pipette Cleaning System	A	1	Capacity: ϕ 130×500mm	Pipette cleaning by ultra sound wave	Basic
E-389	Pipette Set	C	5	Pyrex or equivalent, 0-500 μ l, 0-1000 μ l, 0-5000 μ l, 0-5 μ l, 0-10 μ l, 0-25 μ l, 0-50 μ l, 0-100 μ l, 0-250 μ l	Quantitative sampling for small volume solution	Basic
E-398	Shaker: Slide Shaker with Semicircular Motion	B	2	Speed : Max. 200 rpm, Orbital: 30 mm, Table Size: 400x400 mm	Flat plate reciprocating shaker for mixing sample and reagent	Basic
E-399	Slide Shaker	A	1	Variable Speed: Max. 250 rpm	Flat plate round shaker for reaction plate glass mixing	V-8
E-403	Thermometer	C	4	Range : -70 ~ 50°C, Overall length : Approx. 300mm	Control constant temperature in refrigerator, water bath	Basic
E-405	TLC System	A	1	Size: 200x200 mm (glass)	Study of theory of thin layer chromatography and eluting of lipid, amino acid	IV-7
E-406	Tray : Staining	C	4	Material : Stainless steel, Dimensions : Approx. 350(W) x 300(D) x 40(H) mm	For staining sample and storage of electrophoresis gel	V-9
E-407	Conical Glass Tube	C	20	Capacity :10, 35, 50ml	Spits form for collecting sediment of urine	Basic
E-409	UV Transilluminator	A	1	UV/White light: 360 nm, Portable Type	Reading of electrophoresis gel with UV illumination	V-17
E-410	Vacuum Pump	A	1	Delivery Speed: 8 liter/min., Vacuum Pressure: 500 mmHg	Suction to vacuum environment for experiment	Basic
E-411	Test Tube Mixer	C	4	Mixer, for Test-tube, Revolution range : Max. 2,500rpm	For mixing test tube sample	Basic
E-414	Glass Ware Set	C	1 lot	Test tube, Flask, reagent bottle, Beaker, Glass tube, Bullet, Cylinder glass, Watch glass, Petri glass	Glass ware for experiment, measurement, preservation	Basic

Hall

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual Equipment						
A-13	Photocopier	F	6	Photocopy Type, Copy Size: max. 265 x 410 mm, Magnitude 50 ~ 200%, Sorter, Magnetic Card Reader	Copying text and document from scientific journals to deliver to students	Common
Experiment and Training Equipment						
E-10	ICE Maker	F	3	Cube Type, 70 kg/day	Crushed ice for rapid cooling of reagent and preservation of sample tissue	Common
E-14	Large Refrigerator	F	3	- 5 °C, Pre-fabrication Type, 3.5 x 2.5 x 2 (H)m	Preservation of sample, reagents and experiment under stable low temperature	Common

Class Room

No.	Equipment Name	Std.	Qty	Major Specification	Purpose	Curriculum
Audio Visual						
A-1a	Fixed Television Set	A	12	32", Multi System, Standing Rack: H1, 200 x 800 x 700mm, Steel Frame with Holding Strap	Visual efficiency for specific lecture, seminar, symposium	Common
A-2	Video Cassette Recorder	A	12	Multi System, 4 Head, TV Tuner, 240 Horizontal Resolution	Visual efficiency for specific lecture, seminar, symposium	Common
A-3	Electronic Projector	F	4	Portable Type, Zoom Lens, Screen Coverage 30 - 200"	Visual efficiency for specific lecture, seminar, symposium	Common

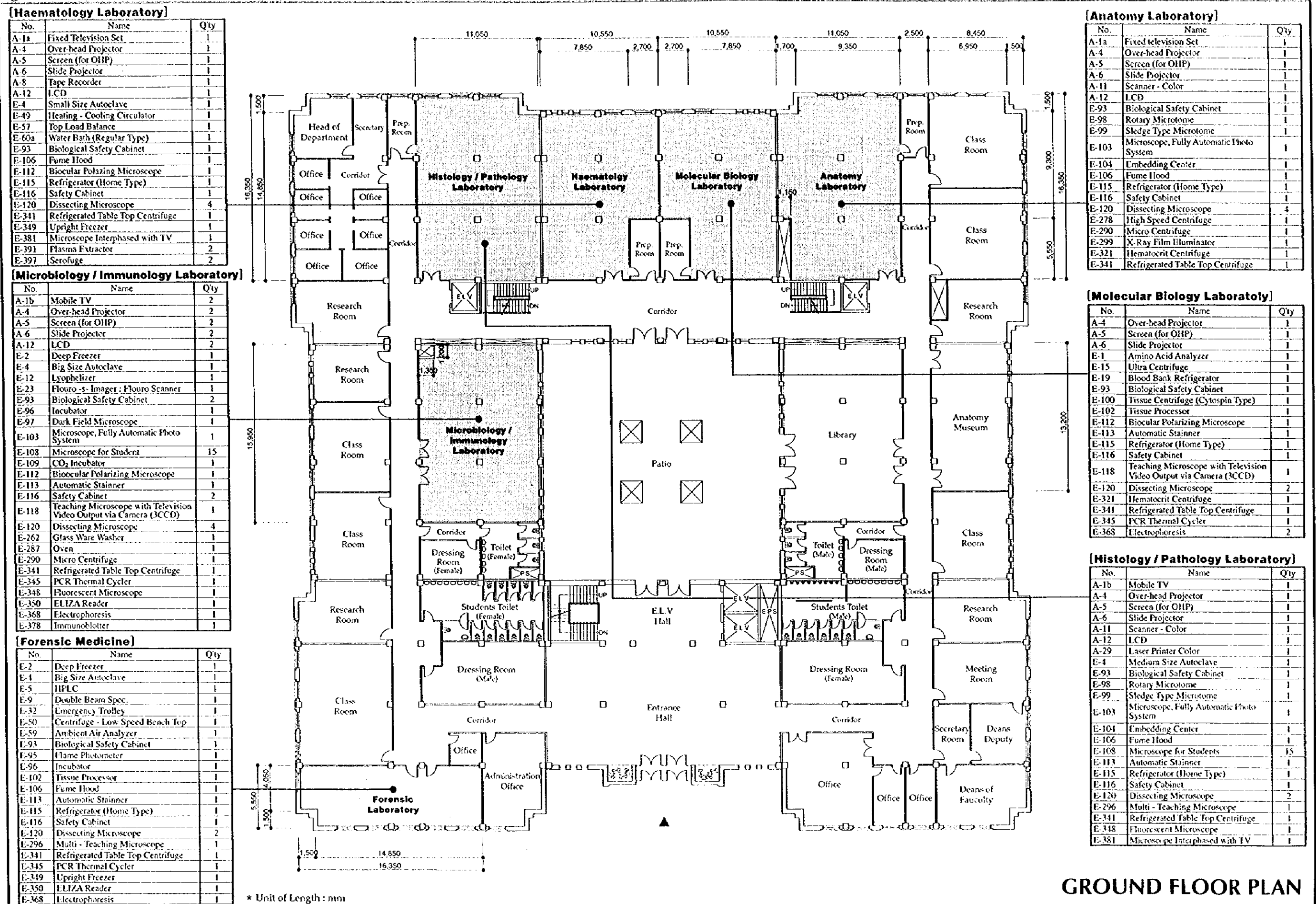
Special Space

No.	Equipment Name	Std.	Q'ty	Major Specification	Purpose	Curriculum
Experiment and Training Equipment						
E-54	Liquid Nitrogen Maker	F	1	Automatic system, 15 liters/day, Nitrogen gas generator	Production of liquid nitrogen for deep structural freeze drying tissue samples	Basic
E-56	Dry Ice Maker	F	1	Production Capacity: 6 kg by 30 kg CO ₂	Production of dry ice for temporary preservation and quick cooling of sample	Basic
E-324	Cylinder Set with Outlet & Regulator	F	1	Material: Metal, Kind of Cylinder: O ₂ , N ₂ , H ₂ , N ₂ O, C ₂ H ₂ , He, Ar, Capacity: 45 Liters	Creation of anaerobic sphere for experiment and spare stock for blood gas analysis	Basic
E-343	Washing Machine (Large)	F	1	Drum Type, Washing capacity : Approx. 10 kg	Cleaning and sanitation of infected clothes or fabrics by gourmand blood	Common
E-344	Distillation Unit (Large)	F	1	Evaporating Capacity: 10 liter/h	Regular distillation for still water for experiment use and stock	Basic
E-351	Analyzer: Chemistry analyzer	F	1	Parameter: Bilirubin, Cholesterol, Glucose, Iron, etc. 18 parameter	Basic operation and study for principle on 1st ~ 2nd grade. Multipurpose diagnosis for enzyme and protein upper 3rd grade. Diagnosis for blood and urine samples on biochemistry, pharmacology, endocrinology	Common, V-6, VIII-6, XV-6
E-352	Blood Cell Counter: Automated	A	1	Whole blood mode 18 Parameters, Predilute mode 8 Parameters	Basic operation and study for principle on 1st ~ 2nd grade. Multipurpose diagnosis for blood components upper 3rd grade on haematology, pathology, physiology	Common, XI-1, XII-7, XVI-2
E-393	Power Compensation System	F	1	Diesel, Dynamo Motor Drive: 75 KVA	Emergency standing generator	Common
Physiology Teaching & Research						
ANIMAL UNIT						
K-78	Animal Cages Set	A	1	Animal cages (300 x 450 x 200 mm ; 30 pcs., 70 x 200 x 120 mm ; 30 pcs.) , Racks: 1,500mm height, Washing machine for animal cages	Keeping and controlling experimental animals in stable circumstance	Common
K-92	Air Conditioner with Strong Ventilation System	A	1	Capacity : 35,000 BTU	Creation of safety environment for experimental animals cage	Common

(3) Equipment Installation Plan

The installation plan of the major equipment for each room/laboratory are shown in Fig.1.

Figure 1 EQUIPMENT LAYOUT PLAN



GROUND FLOOR PLAN

[Biochemistry Laboratory]

No.	Name	Qty
A-1b	Mobile TV	1
E-2	Deep Freezer	1
E-4	Medium Autoclave	1
E-9	Double Beam Spec.	1
E-12	Lyophilizer	1
E-13	DNA Sequencer	1
E-15	Ultra Centrifuge	1
E-69	Reverse Osmosis Ultrafiltration Unit	1
E-77	Tray Dryer	1
E-108	Microscope for Students	15
E-109	CO ₂ Incubator	1
E-113	Automatic Stainer	1
E-114	Deep Freezer - Cabinet Type	1
E-116	Safety Cabinet	1
E-118	Teaching Microscope with Television Video Output via Camera (3CCD)	1
E-120	Dissecting Microscope	4
E-262	Glass Ware Washer	1
E-287	Oven	1
E-290	Micro Centrifuge	1
E-341	Refrigerated Table Top Centrifuge	1
E-342	Pulsed Field gel Electrophoresis System	1
E-345	PCR Thermal Cycler	1
E-347	Laminar Flow Hood	1
E-349	Upright Freezer	1
E-350	ELISA Reader	1
E-359	Gel Documentation Reader	1
E-368	Electrophoresis	2

[Pharmacology Laboratory]

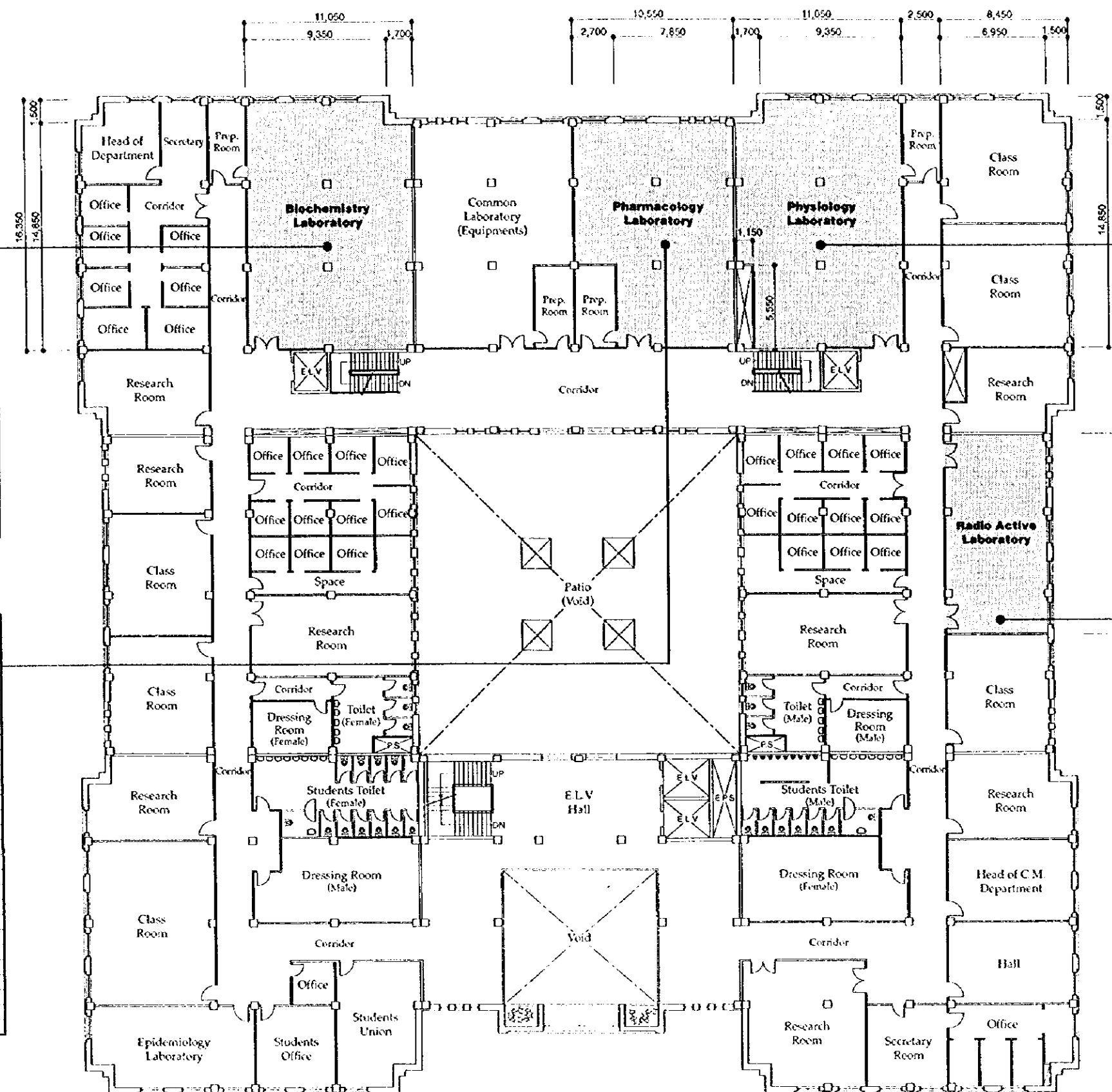
No.	Name	Qty
A-1b	Mobile TV	1
A-4	Over-head Projector	1
A-5	Screen (for OHP)	1
A-6	Slide Projector	1
A-12	LCD	1
E-5	HPLC	1
E-6	GC	1
E-9	Double Beam Spec.	1
E-69	Reverse Osmosis Ultrafiltration Unit	1
E-93	Biological Safety Cabinet	1
E-95	Flame Photometer	1
E-96	Incubator	1
E-106	Fume Hood	1
E-116	Safety Cabinet	1
E-120	Dissecting Microscope	2
E-261	Drug Level Analyzer	1
E-262	Glass Ware Washer	1
E-263	Tablet Dissolution Tester	1
E-264	Tablet Hardness, Thickness Instrument	1
E-276	Kymograph with Stimulator Set	1
E-278	High Speed Centrifuge	1
E-290	Micro Centrifuge	1
E-296	Multi Teaching Microscope	1
E-347	Laminar Flow Hood	1
E-349	Upright Freezer	1
E-350	ELISA Reader	1
E-368	Electrophoresis	1

[Physiology Laboratory]

No.	Name	Qty
A-1a	Fixed television Set	1
A-4	Over-head Projector	1
A-5	Screen (for OHP)	1
A-6	Slide Projector	1
A-11	Scanner - Color	1
A-12	LCD	1
A-29	Laser Printer Color	1
E-93	Biological Safety Cabinet	1
E-96	Incubator	1
E-106	Fume Hood	1
E-114	Deep Freezer - Cabinet Type	1
E-116	Safety Cabinet	1
E-120	Dissecting Microscope	2
E-262	Glass Ware Washer	1
E-268	Nitric Oxide Detector	1
E-271	Animal Operating Set	1
E-276	Kymograph with Stimulator Set	1
E-278	High Speed Centrifuge	1
E-287	Oven	1
E-290	Micro Centrifuge	1
E-291	Blood Gas Analyzer	1
E-303	Multi Channel Recorder Electrocardiograph	4
E-305	Resuscitation Unit	2
E-308	Hemodynamic Measuring System	1
E-310	Inverted Microscope	2
E-314	Electrical Stimulator Set	1
E-335	Tread Mill	1
E-341	Refrigerated Table Top Centrifuge	1
E-347	Laminar Flow Hood	1
E-349	Upright Freezer	1
K-54	High Performance Physiograph	1
K-70	Lab Animal Exercise Set	1

[Radio Active Laboratory]

No.	Name	Qty
A-4	Over-head Projector	1
A-5	Screen (for OHP)	1
A-6	Slide Projector	1
E-3	Beta Counter	1
E-116	Safety Cabinet	1
E-281	Gamma Counter	1



* Unit of Length : mm

FIRST FLOOR PLAN

[Spectroscopy Laboratory 1]

No.	Name	Qty
E-11	Atomic Absorption	1
E-45	Ion Chromatography	1
E-48a	Analytical Balance (with hood), Sensitivity - five D.P.	1
E-106	Fume Hood	1
E-121	pH Meter	1
E-277	I.C.P.-M.S.	1
E-287	Oven	1

[Spectroscopy Laboratory 2]

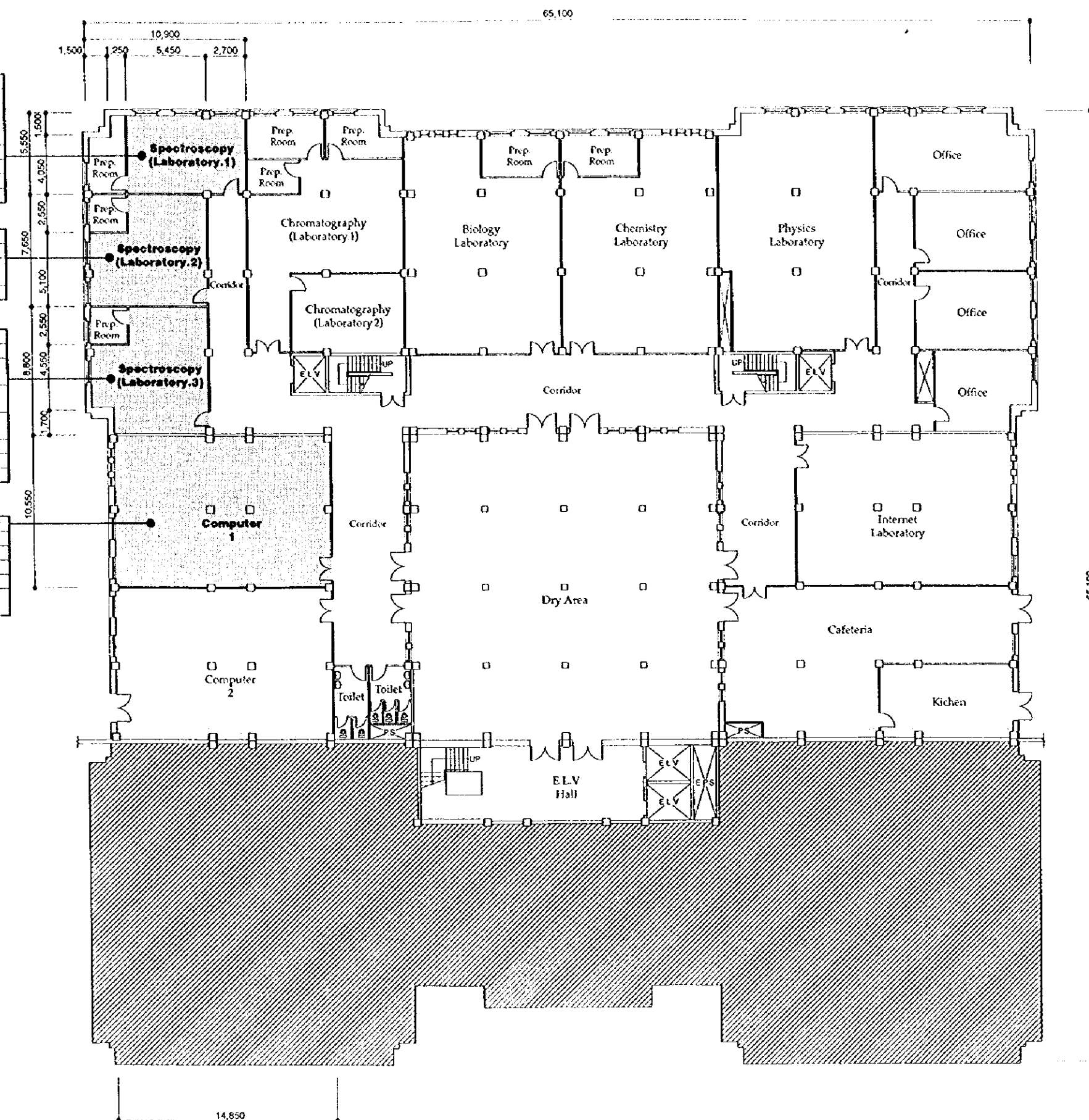
No.	Name	Qty
E-21	Electron Microscope	1
E-48b	Analytical Balance (with hood), Sensitivity - four D.P.	1
E-106	Fume Hood	1

[Spectroscopy Laboratory 3]

No.	Name	Qty
E-46	C, H, N, O, S Analyzer	1
E-47	TGA (Thermal Gravimetric Analyzer)	1
E-48a	Analytical Balance (with hood), Sensitivity - five D.P.	1
E-48b	Analytical Balance (with hood), Sensitivity - four D.P.	1
E-61	Kjeldahl Apparatus	1
E-62	Gerber Machine	1
E-106	Fume Hood	1

[Computer 1]

No.	Name	Qty
A-11	Scanner - Color	2
A-28	Personnel Computer	31
A-29	Laser Printer Color	4
A-30	Laser Printer Black & White	3
A-37	Computer assisted Teaching Slide Maker	1



BASEMENT FLOOR PLAN [1/2]

* Unit of Length : mm

[Chromatography Laboratory 1]

No.	Name	Qty
E-5	HPLC	1
E-6	GC	1
E-7	LC Mass	1
E-8	GC Mass	1
E-9	Double Beam Spec.	1
E-44	FT-IR	1
E-48b	Analytical Balance (with hood), Sensitivity - four D.P.	1
E-49	Heating - Cooling Circulator	2
E-50	Centrifuge - Low Speed Bench Top	1
E-51	Distillator	1
E-52	Sonicator	1
E-60a	Water Bath (Regular Type)	1
E-106	Fume Hood	1
E-115	Refrigerator (Home Type)	1
E-116	Safety Cabinet	1
E-121	pH Meter	1
E-135	Magnetic Spectroscopy	1
E-287	Oven	1
E-290	Micro Centrifuge	1
E-356	Titrator	1

[Chromatography Laboratory 2]

No.	Name	Qty
E-48a	Analytical Balance (with hood), Sensitivity - five D.P.	1
E-78b	Super Critical Extractor Unit	1
E-106	Fume Hood	1
E-116	Safety Cabinet	1

[Biology Laboratory]

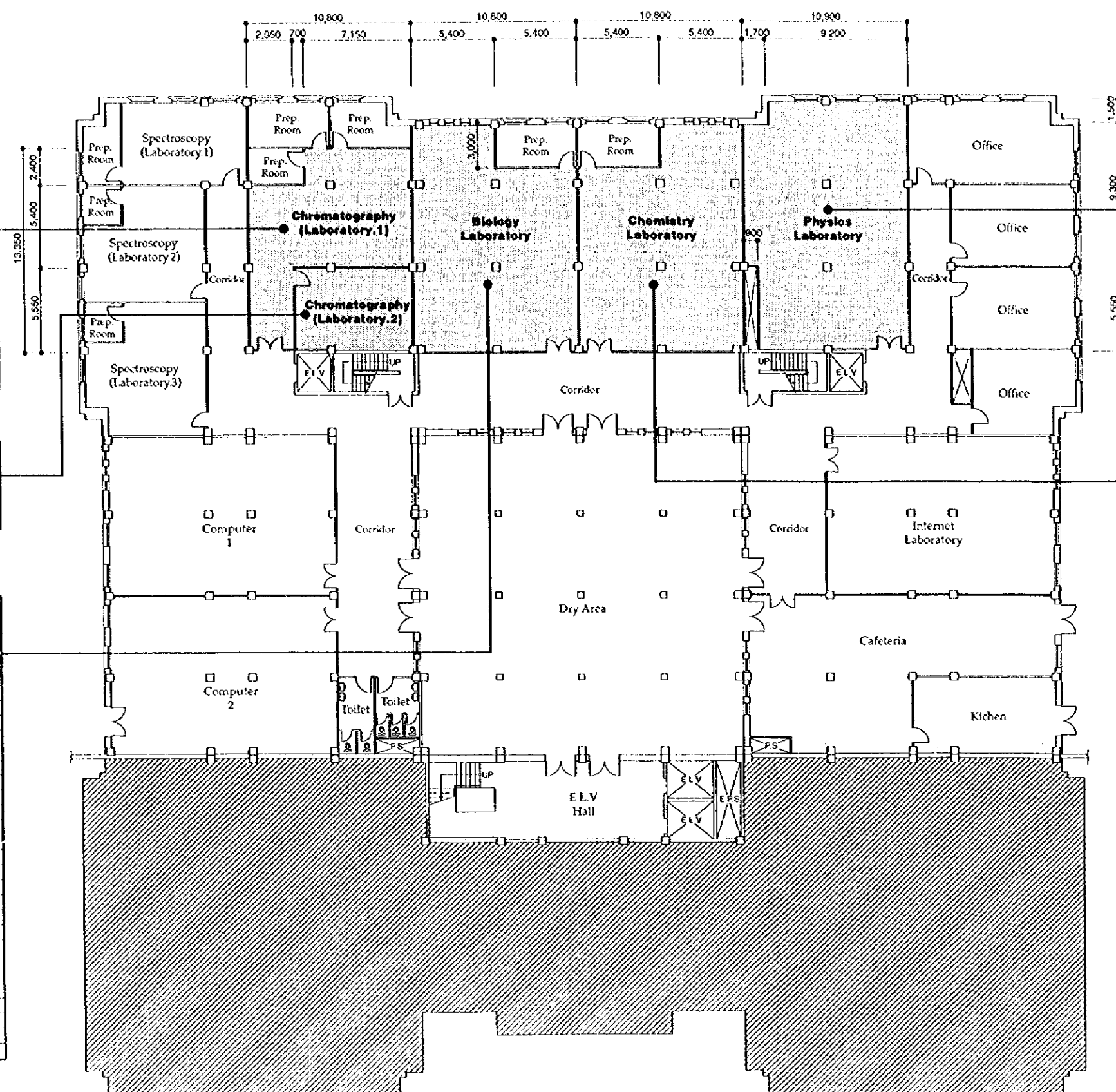
No.	Name	Qty
A-1a	Fixed Television Set	1
A-4	Over-head Projector	1
A-5	Screen (for OHP)	1
A-6	Slide Projector	1
A-11	Scanner - Color	1
A-12	LCD	1
E-4	Small Size Autoclave	1
E-50	Centrifuge - Low Speed Bench Top	2
E-99	Sledge Type Microtome	1
E-102	Tissue Processor	1
E-108	Microscope for Students	15
E-110	Tissue Incubator	1
E-114	Deep Freezer - Cabinet Type	1
E-116	Safety Cabinet	1
E-118	Teaching Microscope with Television Video Output via Camera (3CCD)	1
E-120	Dissecting Microscope	4
E-278	High Speed Centrifuge	1
E-287	Oven	1
E-290	Micro Centrifuge	1
E-296	Multi - Teaching Microscope	1
E-311	Refrigerated Table Top Centrifuge	1
E-312	Pulsed Field Gel Electrophoresis System	1
E-347	Laminar Flow Hood	1
E-348	Fluorescent Microscope	1
E-349	Upright Freezer	1
E-359	Gel Documentation Reader	1
E-363	Culturing Millipore System	1
E-405	TLC System	1

[Physics Laboratory]

No.	Name	Qty
A-1a	Fixed television Set	1
A-4	Over-head Projector	1
A-5	Screen (for OHP)	1
A-6	Slide Projector	1
E-57	Top Load Balance	1
E-79	Sound Level Meter	2
E-125	Basic Current Balance	4
E-126	Induction by means of a Variable Magnetic Field	4
E-127	Optical Pumping	4
E-128	Free Fall	4
E-129	One Dimensional Motions R Truck on the Linear Air Truck	4
E-130	KERR Effect	4
E-131	Torsion Pendulum	4
E-287	Oven	1

[Chemistry Laboratory]

No.	Name	Qty
A-3	Electronic Projector	1
A-4	Over-head Projector	1
A-5	Screen (for OHP)	1
A-6	Slide Projector	1
E-9	Double beam Spec.	2
E-44	FT-IR	1
E-49	Heating - Cooling Circulator	5
E-50	Centrifuge - Low Speed Bench Top	2
E-51	Distillator	1
E-61	Kjeldahl Apparatus	1
E-62	Gerber Machine	1
E-66	Digital Bomb Calorimeter	2
E-68	Rising Film Evaporator	1
E-93	Biological Safety Cabinet	1
E-96	Incubator	1
E-106	Fume Hood	2
E-116	Safety Cabinet	1
E-287	Oven	1
E-290	Micro Centrifuge	1
E-294	Evaporator	6
E-347	Laminar Flow Hood	1
E-356	Titrator	1
E-358	Hydrogenation Autoclave	1
E-385	Osmometer - Freezing Point	2
E-386	Osmometer - Vapor Pressure Point	2
E-405	TLC System	1



* Unit of Length : mm

BASEMENT FLOOR PLAN [2/2]