	Ch 2 Lab Basics	Ch 5 Phage Isolation						Ch 6 Phage Purification					Ch 7 Phage Amplification			Ch 8 Transmission Electron Microscopy		Ch 9 Extracting Phage DNA	Ch 10 Characterizing Phage Genomes by Restriction Enzyme Digests				Ch 11 Characterizing Patterns of Phage Sensitivity and Insensitivity				Toolbox		
Legend: ea = each student; pr = pair of students; sl = sample; cl = class; n = variable number	*Aseptic Technique*	*Collecting Environmental Samples*	*Direct Isolation*	*Plaque Assay (isolation)*	*Picking Plaques*	*Enriched Isolation*	*Spot Test*	*Serial Dilutions*	*Plaque Assay (purification)*	*Collecting Plate Lysates*	*Spot Titer*	*Full Plate Titer*	*Making Webbed Plates (from lysate of known titer)*	*Entering a Phage into phagesDB*	*Archiving Your Phage Sample*	*Mounting Phage Samples for TEM and Staining With UA*	*Mounting Phage Samples for TEM (Classic Protocol w/ Pelco Tabs*	*Phage DNA Extraction*	*Characterizing Phage Genomes by Restriction Digests*	*Casting Agarose Gels*	*Gel Electrophoresis of Restriction Enzyme Digests*	*Analysing Restriction Enzyme Gels*	*Streaking from a hight-titer spot*	*Patch Assay*	*Liquid Phage Release*	*Sensitivity Assay*	*Plaque Streak Plates*	*Making Top Agar*	*Taking Plaque Pictures*
Consumables																													
Microcentrifuge tubes (generic)	1 ea		1/sl	n+2	1/sl	1/sl		n+1	n+2		n+1	n+1	n+1			1 ea	1 ea		7/ea				n +1		n +1	n + 1			
Microcentrifuge tubes (Eppendorf)																		8/sl											
Conical tubes (15mL)			1/sl							1/sl (or)								1/sl											
Conical tubes (50mL)	1 ea	1/sl				1/sl				1/sl (or)																			
Micropipet tips, box (p1000)																													
Micropipet tips, box (p20-200)	1 ea			1 ea	1 ea		1 ea	1 ea	1 ea		1 ea	1 ea	1 ea			1 ea	1 ea	1 ea	1 ea										
Micropipet tips, box (p10)																		1/cl	1/pr		n/cl								
Serological pipette (1mL)																		1 ea											
Serological pipette (5mL)			1/sl	n+2			1/sl		n+2	1/sl	n + 1	n+1	n+1					2 ea					3 ea				3 ea		
Serological pipette (10mL)	1 ea																												
Serological pipette (25mL)						1/sl																							
Syringe (1mL)																													
Syringe (3mL)			1/sl (or)							1/sl (or)								2 ea											
Syringe (5mL)			1/sl			1/sl				1/sl (or)														3 ea					
Syringe filter (0.22um)			1/sl			1/sl				1/sl																			
Sterile wooden sticks or loop																							2 ea	2 ea	2 ea	2 ea	9 ea		
Glassware																													
Baffled flask (250mL)						1/sl																							
Media bottle (100mL)	1 ea																												
Erlenmeyer flask																				n/cl									
Culture tube	1 ea			n+2			1/sl	n+2	n+2		n + 1	n+1	n+1										2 ea	2 ea	1 ea	1 ea	3 ea		
Biologicals, to provide																													
M. smegmatis liquid culture (250uL)				n+2			1/sl		n+2		n + 1	n+1	n+1										3 ea	3 ea	3 ea	3 ea	3 ea		
M. smegmatis liquid culture (500uL)						1/sl																							
Negative control							1 ea				1 ea (or)															1 ea			
Positive control phage				10uL ea							1 ea		optional																
Biologicals, generated in class																													
Liquid lysogen culture																										1/sl			
Lysogen streak plate																							1/sl						
Environmental sample			1 ea	1 ea (or)		1/sl																							
Putative phage plaques				1/sl	1 ea (or)				1 ea (or)																1 ea (or)				1 ea (or)
Phage plaques					1 ea (or)		n	1 ea (or)	1 ea (or)																1 ea (or)		1 ea (or)		1 ea (or)
Phage lysate							5uL	10uL			1 ea	1 ea	1 ea		1.5mL	5uL	5uL	1 mL									1 ea (or)		
Spot plate																								1 ea	1 ea (or)		1 ea (or)		1 ea (or)
Phage gDNA (0.5ug)																			1 ea										
Restriction digested gDNA																					set of 7 ea								
Media/Reagents																													
7H9 enrichment broth (5mL)			1/sl																										
7H9 enrichment broth +1mM CaCl2 (35mL)						1/sl																			1 ea	1 ea			
Phage buffer (100uL)				n+2	1/sl		1/sl	n+2	n+2		n+1	n+1	n+1			1 ea	1 ea						n +1			n + 1			
Phage buffer (8mL)										1/sl																			
Sterile filtered water (100uL)																1 ea	1 ea	1 ea	1/pr										
Top Agar (3mL)				n+2			1/sl		n+2		n + 1	n+1	n+1										1 ea	2 ea	n +1	n + 1	4.5 ea		
L-Agar CB/CHX plates				n+2			1/sl		n+2		n + 1	n+1	n+1										3 ea	3 ea	n +1	n + 1	1/sl		
Agarose gel																					n/cl								
Small bench equipment																													
Rack (13mm)	1/pr			1 ea				1 ea	1 ea		1 ea	1 ea	1 ea										1 ea	1 ea	1 ea	1 ea	1 ea		
Rack (20mm)	1/pr		1 ea	1 ea					1 ea	1 ea								1 ea											
Rack (30mm)	1/pr			1 ea																									
Rack (microcentrifuge tube)	1/pr		1 ea	1 ea	1 ea		1 ea	1 ea	1 ea		1 ea	1 ea	1 ea			1/cl	1/cl	1 ea	1 ea		1 ea								
Bunsen burner	1/pr			1/pr	1/pr		1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1 ea										1/pr	1/pr	1/pr	1/pr	1/pr		
Striker	1/pr			1/pr	1/pr		1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr										1/pr	1/pr	1/pr	1/pr	1/pr		
Bench cleaning materials	1/pr		1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr		1/pr	1/pr	1/pr		1/pr			1/pr	1/pr				1/pr	1/pr	1/pr	1/pr	1/pr		
Vortexer				1/pr		1/pr		1/pr	1/pr		1/pr	1/pr	1/pr		1/pr										1/pr	1/pr			
Microcentrifuge						1/pr										1/cl	1/cl	1/cl	1/pr		1/cl								
Micropipettor (p10)																		1/cl			1/cl								
Micropipettor (p20)				1 ea	1 ea (or)		1 ea	1 ea	1 ea		1 ea	1 ea	1 ea			1/cl	1/cl	1 ea	1 ea										
Micropipettor (p200)	1/pr			1 ea	1 ea (or)			1 ea	1 ea		1 ea	1 ea	1 ea		1 ea			1 ea											
Micropipettor (p1000)																													
Pipette-aid	1 ea		1 ea	1 ea		1 ea	1 ea		1 ea	1 ea	1 ea	1 ea	1 ea		1 ea			1 ea					1 ea	1/pr			1 ea		
Specialty and large equipment																													
Balance																				1/cl									
High speed centrifuge																													
Shaking incubator			1/cl			1/cl																							
Heating block																		1/cl	1/cl										
Water bath				1/cl					1/cl									1/cl	1/cl										
Reach in incubator				1/cl			1/cl		1/cl		1/cl	1/cl	1/cl										1/cl	1/cl	1/cl	1/cl	1/cl		
Transilluminator																						1/cl							
Imaging system				1/cl			1/cl		1/cl		1/cl	1/cl	1/cl									1/cl			1/cl	1/cl			1/cl
Spectrophotometer/Nanodrop																		1/cl											
Gel power Supply																					1/cl								
Gel rig																					1/cl								
Gel casting tray/comb																				1/cl	1/cl								
4deg C refrigerator										1/cl					1/cl			1/cl											
-20deg C freezer																			1/cl		1/cl								
-80deg C freezer															1/cl														
Electron microscope																1/cl	1/cl												
EM Supplies																													
Carbon-formvar coated copper grids																1 ea	1 ea												
Uranyl Acetate 2% (5uL)																1 ea	1 ea												
EM reverse forceps																1/cl	1/cl												
Pelco tabs																	1 ea												
Whatman #3 filter paper wedges																2 ea	2 ea												
Petri dish																	1 ea												
Parafilm (5x5cm)																	1 ea												
Grid storage box																1/cl	1 cl												
Molecular Biology Supplies																													
1kb ladder (50ng/uL)																					100uL/cl								
RNase 1																		1u/sl											
RNase A																		1.25ug/ea											
BamHI + buffer																			4/cl										
Cla1 + buffer																			4/cl										
EcoRI + buffer																			4/cl										
HaeIII + buffer																			4/cl										
HindIII + buffer																			4/cl										
Sal1 + buffer																			4/cl										
Gel Stain																				1/cl									
Agarose																				1/cl									
Gel Buffer (TAE/TBE)																				1/cl									
6X DNA Loading dye																			1/cl		n + 1								
80% isopropanol																		4mL/ea											
Wizard DNA resin																		2mL/ea											
Wizard DNA columns																		2/ea											
Archiving Supplies																													
Barcoded tubes (from Pitt)															n/cl														
DMSO (200uL)															1/sl														
Sterile beads															1/cl														
Additional Supplies																													
Labeling pen		1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea		1 ea			1 ea	1 ea				1 ea	1 ea	1 ea	1 ea	1 ea		
Laboratory Notebook		1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea	1 ea		1 ea
Ruler																						1/pr							
Timer										1/pr	1/pr								1/cl	1 ea	1 ea								
GPS location device		1 ea																											
Computer/laptop														1/cl	1/cl														
Latex or vinyl gloves				1 ea		1 ea	1 ea		1 ea		1 ea	1 ea	1 ea			1 ea	1 ea	1 ea					1 ea	1 ea	1 ea	1 ea	1 ea		
Sealable plastic bag		1/sl																		1 ea									
Microwave																				1 ea									
CDecon	1/pr		1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr
70% EtOH	1/pr		1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr	1/pr
Calculator											1/pr	1/pr	1/pr				1/pr		1/pr							1/pr			