

**Colorado State University**  
 COLLEGE OF VETERINARY MEDICINE AND BIOMEDICAL SCIENCES  
 Department of Microbiology, Immunology & Pathology

**Courses for Combined Residency program**

**Comparative Medicine: Required**

MIP 792 A	Graduate Seminar (all semesters)
MIP 792 C	Microscopy Seminar (4 semesters)
MIP 796-005	Comparative Medicine Seminar (4-6 semesters)
MIP786D	Practicum
MIP 778	Pathology of Laboratory Animals
MIP 779 (previously offered as MIP795)	Laboratory Animal Pathology Rotation
MIP 666	Scientific Writing
MIP 540	Lab Biosafety
MGT 305	Fundamentals of Management
BUS 620, 621,625, 630, 650, 660 (AT LEAST 2 @ 2 credits each)	Business Management
CM 666	Science and Ethics
STAT 307, STAT301 or ERHS/STAT544	Biostatistics

**Comparative Medicine: Highly Recommended**

BC 463	Molecular Genetics
BC 519	Cellular Biochemistry
or	
CM 501	Advanced Cell Biology
MIP 651	Immunobiology

**Anatomic and Clinical Pathology Residents: Required**

MIP 792 A	Research Seminar	1	Path 103, Tues at noon – every semester
MIP 792 C	Microscopy Seminar	1	DMC 101, Wed at 8am – 6 semesters
MIP 786 A, B, C, or D	Practicum	variable	Adjust hours to reflect time on service/not exceeding 14-15 total.
MIP 792 D or E	Seminar – anatomic or clinical path	1	Rounds – Every semester through residency
MIP 796-002	Surgical Pathology	1	Wed 5pm, all first yr, clin path 2 yrs

**Clinical Pathology Residents: Required**

MIP 675	Advanced Bioanalytical Pathology	3	Every 2 <sup>nd</sup> or 3 <sup>rd</sup> Spring (offered Spring of even years)
MIP 796-003	Topics	1	Every semester through residency

**Anatomic and Clinical Pathology Residents: Highly Recommended**

MIP651	Immunobiology	3	Fall. Useful course, many reminders about benchtop assays, current advances in research, etc. Current literature. Useful in learning what researchers are doing in the dept. and whom you might want to work with. Helpful for gen path and for getting a handle on how to read and interpret a paper/published research data.
MIP767	Advanced General Pathology	1	Fall
MIP766 (AP)	Cytopathology	1	Spring
MIP768 (CP)	Advanced Clinical Path	1	Spring
VS 662	Applied Data Analysis	3	
or			
STAT 511/512	Design and Data Analysis for Researchers I and II	4	Fall/Spring

### Anatomic and Clinical Pathology Residents: Recommended

CM 501 (AP/CP)	Advanced Cell Biology	4	Fall
or			
BC 565	Molecular Regulation of Cell Function	3 or 4	Spring
MIP 615 (AP)	Ophthalmic Pathology	1	Fall of even years. Good systematic review of diseases affecting each part of eye, with ophtho residents.
MIP 765 (AP)	Comparative Neuropathology	2	Spring of even years
MIP 778 (AP)	Pathobiology of Laboratory Animals	3	Fall of odd years. Great survey of lab animal diseases, gross and histo.
MIP 779 (AP)	Laboratory Animal Pathology Rotation	2	Spring of even years. Great survey of lab animal diseases, gross and histo.
MIP796-010 (AP)	Group Study – Gross Pathology	1	Day and time varies
MIP643 (AP/CP)	Grant writing	1	Spring. Really useful for anyone getting a PhD in MIP because of having to write a grant for prelims.

### Anatomic and Clinical Pathology Residents: Other possibilities

VS 628	Physiology and Pathophysiology	3	Great blend of medicine, pathogenesis and pathology. Useful knowledge on a day-to-day basis. Extra benefit of getting to know the clinicians/clinical residents as well.
ERHS 510	Cancer Biology	3	Spring. Review of mechanisms behind mutagenesis and known mutations in common neoplasms.
MIP 666	Writing Scientific Manuscripts	3	Fall. Scientific Writing (highly useful). Good manuscript writing class
ERHS 542/544	Biostatistical Methods for Qualitative Data	3	Fall
BC 563	Molecular Genetics	4	Fall. great molecular techniques, challenging and time consuming.
MIP 654	Research policies and regulation	1	Fall. required if you're receiving NIH funding
MIP 628	Immunity to Infection	3	Spring of odd years. nice to have continuation of 651 immunobio course
ERHS 603	ToxPath	3	Fall. a toxicology class with less toxPath
ERHS 602	Toxicological Mechanisms	3	Spring
ERHS 568	Pharmaceutical and Regulatory Toxicology	3	Spring

### Microbiology Residents: **Required**

MIP 792 A	Research Seminar	1	Path 103, Tues at noon – every semester
MIP 795-001	Independent Study	variable	Adjust hours to reflect time on service/not exceeding 14-15 total.
MIP 700	Topics in Microbiology	1	Once per year, minimum 4 semesters
MIP 654	Research Policies and Regulations	1	Fall

### Microbiology Residents: Highly Recommended

MIP 540	Biosafety in Research Labs	2	Spring
MIP 581A5, 581A6, 581A7	Advanced Virology modules	3 total	Spring even years
MIP 651	Immunobiology	3	Fall
MIP 580B1, 580B2, 580B3	Bacterial Pathogenesis modules	3 total	Fall
Statistics	Course determined by graduate committee	3-4	

### MIP Graduate Degree Requirements

<b>MS</b>		<b>PhD</b>	
	30 credits total		72 credits total
	24 credits at CSU		30 credits can be transferred from MS or DVM degree
	16 credits must be 500+		21 credits must be 500+ (beyond MS)
	12 credits must be regular courses		16 credits must be regular courses
	9 credits must be regular w/ MIP prefix		13 credits must be regular w/ MIP prefix