

**POTENTIAL GRADUATE ELECTIVE COURSES FOR PHARMACOLOGY AND
TOXICOLOGY GRADUATE GROUP STUDENTS
(ADVANCED PTX and BREADTH REQUIREMENT)**

The best source of information about courses is the UC Davis General Catalog, which is available in the bookstore, in department offices, and on-line (registrar.ucdavis.edu). Relevant courses are listed under departments (note that departments in the schools of Engineering, Medicine and Vet Medicine are sub-listed under “E,” “M” and “V,” respectively, in the catalog) or under graduate groups (e.g. Genetics, Immunology).

Five weeks prior to the start of every quarter, the Class Schedule & Registration Guide can be obtained in the same places. Confirm the availability of graduate courses, which may differ from the listings in the General Catalog.

****Watch for new courses announced by posted fliers and e-mail****

Graduate-level courses are numbered 200-299.

Undergraduate, upper division courses are numbered 100-199. Many are good for background, especially in areas you might not have covered as an undergraduate. They will not count toward the requirement for 3 units of graded, graduate elective courses.

Both graduate and upper division undergraduate courses are counted in your GPA.

<i>Course #</i>	<i>Title</i>	<i>Instructor</i>	<i>Units</i>	<i>Offered</i>
<i>Anatomy, Physiology & Cell Biology (APC), Veterinary Medicine</i>				
APC 285	Morphometry of Cells, Tissues, & Organs (Alternate years)	Hyde	2	W
APC 286	Basics of Microscopy & Cellular Imaging (Alternate years)	VanWinkle	2	S
APC 291	Topics in Biology of Respiratory System	Hyde/Wu/ Pinkerton	1	F/W/S
<i>Animal Biology (ABO)</i>				
ABO 255	Physiology of the Stress Response	Kueltz	2	S
<i>Animal Science (ANS)</i>				
ANS 131	Reproduction & Early Development in Aquatic Animals	Doroshov	4	S
<i>Applied Biological Systems Technology (ABT)</i>				
ABT 180	Introduction to Geographic Information Systems – Cancelled for 2010-2011	Plant	4	F
<i>Atmospheric Science (ATM)</i>				
ATM 160	Introduction to Atmospheric Chemistry	Anastasio	4	W
ATM 280A	Air Quality Policy in the Real World (Not offered every year)	Staff	4	W/S

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ATM 280B	Air Quality Policy in the Real World (Not offered every year)	Staff	4	W/S
ATM 298	Group Study	Staff	1-5	Not Noted
Avian Science (AVS)				
AVS 103	Avian Development & Genetics	Delany	3	F
Biological Chemistry (BCM), School of Medicine				
BCM 230	Practical NMR Spectroscopy & Imaging	Staff	1	F
Biochemistry & Molecular Biology (BMB)				
BMB 290	Seminar	Staff	1	F/W/S
Biological Sciences (BIS)				
BIS 101	Genes & Gene Expression F/W/S	Bowman, S. Chan, Dvorak, Gottlieb, Heyer, O'Niell, Quiros, Rodriguez, Rose		4
BIS 101D	Genes & Gene Expression Discussion	Staff	1	F/W/S
BIS 102	Structure & Function of Biomolecules	Gasser, Hilt, Leary, Theg, Toney	3	F/W/S
BIS 103	Bioenergetics & Metabolism	Abel, Callis, Doi, Fiehn, Hilt, I. Segel, L. Segel	3	F/W/S
BIS 104	Regulation of Cell Function	Edwards, Etzler, Kaplan, S. Lin, Myles, Privalsky, Shiozaki, Starr	3	F/W/S
BIS 298	Group Study	Staff	1-5	Not Noted
Biostatistics (BST)				
BST 290	Seminar in Biostatistics	Staff	1	F/W/S
Cell & Developmental Biology (CDB)				
CDB 200	Current Techniques & Cell Biology (Same course as Molecular & Cellular Biology 200A)	Beck	2	F
Cell Biology & Human Anatomy (CHA), School of Medicine				
CHA 101	Human Gross Anatomy	Gross	4	W
CHA 292	Fertilization & Gamete Literature Critique	Meizel	1	F/W/S

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<i>Cell & Developmental Biology (CDB)</i>					
	CDB 200	Current Techniques in Cell Biology	Beck	2	F
	CDB 205	Topics in Cell Biology of the Cytoskeleton	McNally	2	F
<i>Chemistry (CHE)</i>					
	CHE 241C	Mass Spectrometry (Alternate years)	Staff	3	W
<i>Clinical Research (CLH), School of Medicine</i>					
	CLH 230	CHF Disease Mechanism	Goldkorn	3	W
	CLH 290A	Hot Topics in Clinical Research	Tarantal	1	W
	CLH 290B	Hot Topics in Stem Cell Biology	Tarantal	1	W
	CLH 298	Group Study	Staff	1-5	F/W/S
<i>Ecology (ECL)</i>					
	ECL 211	Advanced Topics in Cultural Ecology	Staff	4	F
	ECL 290	Seminar in Ecology	Staff	1-4	F/W/S
	ECL 296	Topics in Ecology & Evolution	Staff	1	F/W/S
	ECL 298	Group Study	Staff	1-5	F/W/S
<i>Endocrinology (EDO)</i>					
	EDO 220	Endocrinology Literature Critique	Turgeon	1	F/W
<i>Engineering: Applied Science (EAD)</i>					
	EAD 289E	Special Topics in Applied Science - Materials Science	Staff	1-5	F/W/S
<i>Engineering: Biomedical (BIM)</i>					
	BIM 109	Biomaterials	Revzin	4	S
<i>Engineering: Computer Science (ECS)</i>					
	ECS 124	Theory & Practice of Bioinformatics	Filkov, Gusfield	4	S
	ECS 165A	Database Systems	Gertz, Ludaescher	4	W
	ECS 234	Computational Functional Genomics	Filkov	4	W
<i>Engineering: Mechanical (EME)</i>					
	EME 161	Combustion and the Environment	Kennedy/Shaw	4	S
<i>Entomology (ENT)</i>					
	ENT 101	Functional Insect Morphology	Kimsey	3	W
<i>Epidemiology & Preventive Medicine, School of Medicine</i>					
	EPP 245	Statistical Analysis of Laboratory Data	Rocke	4	F

<i>Quarter</i>	<i>Course #</i>	<i>Title</i>	<i>Instructor</i>	<i>Units</i>	<i>Offered</i>
<i>Environmental Toxicology (ETX)</i>					
	ETX 101	Principles of Environmental Toxicology	Denison	4	F
	ETX 102A	Environmental Fate of Toxicants	Tjeerdema	4	W
	ETX 102B	Quantitative Analysis of Environmental Toxicants	Shibamoto	5	S
	ETX 103A	Biological Effects of Toxicants	Rice	4	W
	ETX 104	Environmental & Nutritional Factors In Cellular Regulation & Nutritional Toxicants	Oteiza, Rucker	4	S
	ETX 110	Toxic Tragedies & Their Impact on Society	Rice	2	W
	ETX 111	Introduction to Mass Spectrometry	Staff	3	W
	ETX 120	Perspectives in Aquatic Toxicology	Tjeerdema	4	W
	ETX 127	Environmental Stress & Development Summer In Marine Organisms	Cherr	10	
	ETX 128	Food Toxicology	Shibamoto/ Mitchell	3	S
	ETX 130	The Role & Applications of Toxicology In Modern Industry	Wong	3	S
	ETX 131	Environmental Toxicology of Air Pollutants	Kado	3	F
	ETX 135	Health Risk Assessment of Toxicants	Reed	3	F
	ETX 138	Legal Aspects of Environmental Toxicology	Alexeeff	3	W
	ETX 146	Exposure & Dose Assessment	Bennett	3	S
	ETX 203	Environmental Toxicants	Matsumura	4	W
	ETX 214	Mechanisms of Toxic Action	Denison/ Hammock	3	S
	ETX 220	Analysis of Toxicants	Wood	3	F
	ETX 220L	Analysis of Toxicants Laboratory	Wood	2	F
	ETX 228	Gas Chromatography/Mass Spectrometry Of Toxic Chemicals	Holstege	3	W
	ETX 234	Neurophysiological Basis of Neurotoxicology (Same class as Physiology 234)	Staff	3	F
	ETX 240	Ecotoxicology	Johnson/Miles	3	S
	ETX 250	Reproductive Toxicology (Alternate years)	Miller	3	W
	ETX 260	Immunotoxicology (Alternate years)	Golub	3	
	ETX 270	Toxicology of Pesticides	Matsumura	3	W
	ETX 278	Molecular Techniques	Denison/Rice	3	F
	ETX 280	Forensic DNA Analysis (Same course as Forensic Science 280) (Alternate years)	Von Beroldingen	3	

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<i>Geography (GEO)</i>					
	GEO 298	Group Study	Staff	1-5	
<i>Immunology (IMM)</i>					
	IMM 201	Introductory Immunology	Miller	4	F
	IMM 293	Current Concepts in Immunology	Baumgarth	4	W
	IMM 295	Cytokines	Luckhart	3	S
	IMM 296	Advanced Topics in Immunology	Maverakis	2	F
<i>Internal Medicine (IMD), School of Medicine</i>					
	IMD 220D	Cardiovascular System	Laslett	2.5	W
<i>Microbiology (MIC)</i>					
	MIC 215	Recombinant DNA	Privalsky	3	F
	MIC 292	Seminar in Bacterial Physiology & Genetics	Staff	1	F/W/S
<i>Biophysics (BPH)</i>					
	BPH 290	Biophysics Seminar	Staff	1	F/W/S
<i>Molecular, Cellular, & Integrative Physiology (MCP)</i>					
	MCP 200L	Animal Cell Culture Laboratory	Wilson	4	W
	MCP 210A	Advanced Physiology	Adams	4	F
	MCP 216	Neurophysiology Literature	Pappone	3	F
	MCP 220	General & Comparative Physiology of Reproduction	Adams,Berger, Conley	3	S
	MCP 290	Seminar	Staff	1	F/W/S
	MCP 291D	Research Approaches to Physiology	Eiserich/Raybould	2	W
<i>Molecular and Cellular Biology (MCB)</i>					
	MCB 121	Molecular Biology of Eukaryotic Cells	Burgess, Dahmus, Gasser, Harmer	3	W/S
	MCB 162	Human Genetics	Chedin, Sanders	3	F
	MCB 200A	Current Techniques in Cell Biology (Same course as Cell & Dev Biology)	Beck	2	F
	MCB 200B	Current Techniques in Biochemistry	Kaplan	2	W
	MCB 221C	Molecular Biology (Same course as Genetics 201C)	Baldwin, Chen, Heyer, Korf, Stewart	4	S
	MCB 251	Molecular Mechanisms in Early Development		Myles	3
		F			
	MCB 256	Cell & Molecular Biology of Cancer	Armstrong	2	F
	MCB 257	Cell Proliferation & Cancer Genes	Carraway, Radke	3	F
	MCB 263	Biotechnology Fundamentals & Application	Privalsky, Rodriguez, Vandergheynst	2	W

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MCB 291	Current Progress in Molecular & Cellular Biology	Draper	1	F/W/S
MCB 294	Current Progress in Biotechnology	Kjelstrom, McDonald, Rodriguez	1	F/W/S
MCB 295	Literature in Molecular & Cellular Biology	Baldwin, Fisher, Myles, Privalsky, Radke, Wilson	1	F/W/S
MCB 390	Methods of Teaching	Staff	1	F/W/S
<i>Medical Microbiology (MMI), School of Medicine</i>				
MMI 200D	Mechanisms for Microbial Interactions With Hosts	Baumler/Beaman	3	W
MMI 208	Seminars on Microbiology & Immunology	Torres	1	F/W/S
MMI 210	Animal Models of Infectious Disease Journal Club	Solnick	1	W
MMI 280	Molecular Pathobiology for Diagnosis And Therapy of Human & Animal Diseases	Tsolis	3	W
<i>Preventive Veterinary Medicine (MPM), Veterinary Medicine</i>				
MPM 402	Medical Statistics I Summer	Farver	4	
MPM 403	Medical Statistics II	Farver	4	F
<i>Neurobiology, Physiology, and Behavior (NPB)</i>				
NPB 100	Neurobiology (Not open for credit for students who have completed Neuroscience 221, 222)	Chapman/Cheng/ Mulloney/Sutter	4	F W/S
NPB 101	Systemic Physiology	Bautista/DeBello Fuller/Furlow/ Ishida/Goldberg/ Usrey/Weidner/ Wingfield	5	F/W/S
NPB 113	Cardiovascular, Respiratory, & Renal Physiology	Goldberg	4	W
NPB 130	Physiology of the Endocrine Glands	Adams	4	F
NPB 131	Physiological Genomics	Warden	3	F
NPB 168	Neurobiology of Addictive Drugs	Liets	4	S
NPB 161	Developmental Neurobiology	Chalupa/ McAllister/Zito	3	S
NPB 270	How to Write a Fundable Grant Proposal	Chalupa	3	S

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<i>Neuroscience (NSC)</i>					
	NSC 201	Neuroanatomy	Amaral/Jones/ Usrey	3	F
	NSC 211	Advanced Topics in Neuroimaging	Miller	2	W
	NSC 220	How to Give a Scientific Seminar	McAllister	3	W/S
	NSC 221	Cellular Neurophysiology	Trimmer/Yamoah	4	F
	NSC 222	Systems Neuroscience (Same course as Neurobiology, Physiology, & Behavior 222)	Usrey	5	W
	NSC 223	Cognitive Neuroscience (Same course as Psychology 261)	Staff	4	S
	NSC 224A	Molecular & Developmental Neurobiology	Dias/L'Etoile	2	W
	NSC 285	Literature in Visual Neuroscience	Usrey/Britton	2	F/W/S
	NSC 289	Topics in Molecular & Developmental Neurobiology	Diaz/McAllister/ Zito	1	W/S
<i>Nutrition (NUT)</i>					
	NUT 111AV	Introduction to Nutrition & Metabolism	McDonald	3	S
	NUT 230	Experiments in Nutrition: Design & Execution	Staff	2	F/W/S
	NUT 251	Nutrition & Immunity (Alternate years)	Klasing, Erickson, Stephensen	2	W
	NUT 291	Advanced Nutrition Seminar	Staff	1	F/W/S
	NUT 492A	Professionalism: An Academic Perspective	Staff	2	Not Given
<i>Medical Pharmacology (PHA), School of Medicine</i>					
	PHA 207	Drug Discovery and Development	Wulff	3	W
	PHA 255	Gene Therapy	Segal	3	S
<i>Pathology, Microbiology, and Immunology (PMI), Veterinary Medicine</i>					
	PMI 126	Fundamentals of Immunology	Stott	3	W
	PMI 126L	Immunology Laboratory	Stott	2	W
	PMI 250	Philosophy & Ethics of Biomedical Science	Galland	1	S
	PMI 270	Advanced Immunology (Alternate years)	Stott	3	W
	PMI 275	Comparative Pathology of Organ Systems	Affolter	4	F
	PMI 283	Comparative Avian Anatomy & Pathology	Lowenstine	1-3	F
	PMI 285	Cellular Basis of Disease (Alternate years)	Mohr/Wu	3	W
	PMI 293A	Seminar in Infectious Diseases	Byrne	1	F/W/S

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<i>Pharmacology & Toxicology (PTX)</i>					
	PTX 277	Life & Death Decisions at the Cellular Level (Alternate years)	Goldkorn	2	S
<i>Plant Sciences (PLS)</i>					
	PLS 211	Principles & Practices of HPLC	Goyal	2	S
<i>Population, Health, & Reproduction (PHR), Veterinary Medicine</i>					
	PHR 292	Current Topics in Reproduction	Staff	1	F/W/S
<i>Soil Science (SSC)</i>					
	SSC 290	Special Topics in Soil Science	Staff	1	F/W/S
<i>Statistics (STA)</i>					
	STA 100	Applied Statistics for Biological Sciences (Not open for credit for students who have taken STA 102)	Staff	4	F/W/S
	STA 102	Introduction to Probability Modeling & (Not open for credit for students who have taken STA 100)	Staff	4	F/S
	STA 106	Applied Statistical Methods: Analysis of Variance	Staff	4	F/W
	STA 108	Applied Statistical Methods: Regression Analysis	Staff	4	F/W/S
	STA 131A	Introduction to Probability Theory	Mueller	4	F/W/S
	STA 131B	Introduction to Mathematical Statistics	Mueller	4	W/S
	STA 226	Statistical Methods for Bioinformatics (Same class as Biostatistics 225 – alternate years)	Staff	4	W
<i>Veterinary Molecular Sciences (VMB), Veterinary Medicine</i>					
	VMB 247	Natural Toxicants (Alternate years)	Staff	2	S
	VMB 253	Metabolism of Toxicants & Drugs	Buckpitt	2	W
	VMB 254	Toxicology of the Respiratory System	Buckpitt	3	W
<i>Veterinary Medicine, Medicine & Epidemiology (VME), Veterinary Medicine</i>					
	VME 413	Medical Primatology	Lerche	2	S
	VME 416	Diseases of Fish (Offered in alternate years)	Hedrick	2.1	S
	VME 463B	Food Animal Medicine, Level I	Angelos	3.4	F
	VME 464A	Equine Medicine	Wilson	3.2	S

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<i>Veterinary Medicine, Surgical & Radiological Science (VSR), Veterinary Medicine</i>					
	VSR 401	Small Animal Radiology Case Discussions	Spriet	1	F/W/S
	VSR 402	Large Animal Radiology Case Discussions	Spriet	1	F/W/S
	VSR 491R	Anesthesia/Critical Care Basic Science Management Conference	Pypendop	1.2	F/W/S
<i>Wildlife, Fish, and Conservation Biology (WFC)</i>					
	WFC 120	Biology & Conservation of Fishes	Moyle	3	F
	WFC 121	Physiology of Fishes	Staff	4	W
	WFC 291	Seminar in Aquatic Ecology (Alternate years)	Moyle	2	S
	WFC 292	Physiology of Fishes Seminar	Staff	1	F