Tentative RELATED COURSE Offerings – December 2024 (courses highlighted in blue do not require the full completion of LS Cores Requirements)

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	Summer:
ANTH 152	4 units	Evolution of the First Hominids	ANTH 002 or consent of instructor.			Schedule ourse is no		ntly offered).
ANTH 153	4 units	Evolution of the Genus Homo	ANTH 002 or consent of instructor.			Schedule ourse is no		ntly offered).
ANTH 155	6 units	Human Osteology	ANTH 002, upper-division standing; or consent of instructor.	Useful for anthropologists and those intending careers in medicine, physical therapy, and forensics.	X			
*BCH 015	3 units	Introduction to Biochemistry Lab	CHEM 008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA with grade of "C-" or better (CHEM 008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA may be taken concurrently); or consent of		X	Х		X
BCH 110A (if not already applied to UD)	4 units	General Biochemistry	BIOL 005A with a grade of "C-" or better; CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 08HLC with grades of "C-" or better.	Credit is awarded for only one of BCH 110A or BCH 110HA.	X	X		
BCH 110C	4 units	General Biochemistry	BCH 110A or BCH 110HA with a grade of "C-" or better, BIOL 102 or consent of instructor. BCH 110B or BCH 110HB is highly recommended.	Credit is not awarded for BCH 110C if it has already been awarded for BCH 110HC or BIOL 107A.		X	X	
BCH 120	4 units	Topics in Human Biochemistry	BCH 100 with a grade of "C+" or better or BCH 110B or BCH 110HB with a grade of "C-" or better or consent of instructor.	The discussion sections are used for presentations on topical medical problems.	X		X	
BCH 162	5 units	Advanced Biochemistry Laboratory	BCH 015; BCH 110B or BCH 110HB; BCH 110C or BCH 110HC all with grades of "C-" or better, or consent of instructor.			X	X	
BCH/BPSC 183	4 units	Plant Biochemistry and Pharmacology Of Plant	BCH 110A or BCH 110HA; BCH 110B or BCH 110HB; or BCH 100; or consent of instructor.	++Cross-listed course.	X			
BCH 184	4 units	Topics in Physical Biochemistry	BCH 100 with a grade of "C-" or better or BCH 110A or BCH 110HA with a grade of "C-" or better; BIEN 135 with grade of "C-" or better, or CHEM 109 with grade of "C-" or better or CHEM 110A with grade of "C-" or better; or consent of instructor.			X		
****BIOL 194	1-4 units	Independent Reading	Consent of instructor.	Course is repeatable to a maximum of 6 units.	X	Х	X	Х
****BIOL 197	1-2 units	Introduction to Research	Sophomore, junior or senior standing and consent of instructor and departmental chairperson.	Graded Satisfactory (S) or No Credit (NC). Course is repeatable.	X	X	Х	Х
****BIOL 199	1-4 units	Junior/Senior Research	Junior or senior standing, a minimum GPA of 3.0 and consent of instructor and departmental	Graded Satisfactory (S) or No Credit (NC). Course is repeatable.	X	X	Х	Х

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	Summer:
BPSC 109/CBNS 109	4 units	Epigenetics	BIOL 102.	++Cross-listed course.		X		
***BPSC 133	5 units	Plant Diversity and Evolution	BIOL 005C; or consent of instructor.				X	
***BPSC/ENSC 134	4 units	Social Conditions and Plant Growth	BIOL 104/BPSC 104 or ENSC 100; or consent of instructor.	++Cross-listed course.		Schedule ourse is not		ntly offered).
BPSC 135	4 units	Plant Cell Biology	BIOL 005C; BCH 100 or BCH 110A; or consent of instructor.			X		
BPSC 146	4 units	Plant Ecology	BIOL 104 or BPSC 104 or BIOL 116; STAT 010; or consent of instructor.				Х	
BPSC 149	2 units	Nanobiotechnology	BIOL 005C; BIOL 102; CHEM 008C or CHEM 08HC, CHEM 08LC or CHEM 08HLC; PHYS 002C or PHYS 02HC, PHYS 02LC or PHYS 02HLC or PHYS 040C or PHYS 040HC; restricted to class level standing of junior, senior; or consent of instructor.			s Schedule ourse is not	,	ntly offered).
BPSC 150	4 units	Genes, Selection and Populations	BIOL 102 with a grade of "C-" or better, upperdivision standing; or consent of instructor.				X	
CBNS 116	4 units	Human Neuroanatomy: Structure-Function Relationship	CBNS 106 with a grade of "C-" or better or consent of instructor.				X	X
CBNS/PSYC 120	4 units	Cellular Neuroscience: Membrane and Synaptic Phenomena	CBNS 106 or consent of instructor.	++Cross-listed course.		X		Х
CBNS/PSYC 120L	4 units	Neuroscience Laboratory	CBNS 120/PSYC 120 or concurrent enrollment.	++Cross-listed course.	X	X	Х	Х
CBNS/PSYC 121	4 units	Developmental Neuroscience	CBNS 106 or consent of instructor.	++Cross-listed course.		Х		
CBNS/PSYC 124	4 units	Systems Neuroscience	CBNS 106 with a grade of C- or better; or consent of instructor.	++Cross-listed course.	X		Х	Х
CBNS/PSYC 125	4 units	Neuropharmacology	CBNS 120/PSYC 120.	++Cross-listed course.	Х		Χ	
CBNS/PSYC 126	4 units	Neuroscience of Learning and Memory	CBNS 106 or PSYC 110 or consent of instructor.	++Cross-listed course.	Х			Х
CBNS/PSYC 127	4 units	Behavioral Control Systems	CBNS 120/PSYC 120; CBNS 124/PSYC 124 strongly recommended.	++Cross-listed course.			Х	
***CBNS 133	4 units	Scientific Writing for Cell, Molecular and Developmental Biologists	BIOL 102, BIL 107A, CBNS 101, CBNS 108; a major in Cell, Molecular, and Developmental Biology; or consent of instructor.	Satisfactory (S) or No Credit (NC) grading is not available.				ntly offered).
*CHEM 5	5 units	Quantitative Analysis	CHEM 001C with a grade of C- or better, CHEM 01LC with a grade of C- or better or CHEM 01HC with a grade of C- or better, CHEM 1HLC with a grade of C- or better or CHEM 002C with a grade of C- or better, CHEM 02LC with a grade of C- or better.			X		X

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	Summer:
CHEM 109	4 units	Survey of Physical Chemistry	CHEM 001C with a grade of C- or better or CHEM 01HC with a grade of C- or better; CHEM 01LC with a grade of C- or better or CHEM 1HLC with a grade of C- or better; MATH 009B with a grade of C- or better or MATH 09HB with a grade of C- or better or MATH 007B with a grade of C- or better; or consent of instructor.	Primarily for majors in life and agricultural sciences; not recommended for Chemistry majors.	Х			X
CHEM 110A	4 units	Physical Chemistry: Chemiscal Thermodynamics	CHEM 001C with a grade of C- or better or CHEM 01HC with a grade of C- or better or CHEM 002C with a grade of C- or better; CHEM 01LC with a grade of C- or better or CHEM 1HLC with a grade of B or better or CHEM 02LC with a grade of C- or better; MATH 010A with a grade of C- or better, may be taken concurrently or MATH 009C with a grade of C- or better; PHYS 002C with a grade of C- or better or PHYS 040C with a grade of C- or better or PHYS 040C with a grade of C- or better; or consent of		X			
CHEM 110B	4 units	Physical Chemistry: Introduction to Statistical Mechanics and Kinetics	CHEM 110A with a grade of "C-" or better or consent of instructor; prior or concurrent enrollment in MATH 010B is recommended.			Х		
CHEM 111	4 units	Physical Chemistry Laboratory	CHEM 110A and CHEM 110B with grades of "C-" or better (CHEM 110B may be taken concurrently), or consent of instructor. CHEM 113 recommended.			Х		
CHEM 113	4 units	Physical Chemistry: Introduction to Quantum Chemistry	CHEM 001C with a grade of C- or better or CHEM 01HC with a grade of C- or better or CHEM 002C with a grade of C- or better; CHEM 01LC with a grade of C- or better or CHEM 1HLC with a grade of C- or better or CHEM 02LC with a grade of C- or better; MATH 009C with a grade of C- or better or MATH 09HC with a grade of C- or better; MATH 010A with a grade of C- or better, may be taken concurrently; PHYS 002C with a grade of C- or better, may be taken with a grade of C- or better, may be taken concurrently or PHYS 040C with a grade of C- or better, may be taken				X	
CHEM 125W	3 or 5 units	Instrumental Methods	CHEM 005 with a grade of C- or better; PHYS 002C, may be taken concurrently or PHYS 02HC, may be taken concurrently or PHYS 04oC, may be taken concurrently or PHYS 04oHC, may be taken concurrently; or consent of instructor.		Х			
CHEM 143	3 units	Chemical Biology	CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 08HLC.			Χ		

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	Summer:
CS 9A+*	4 units	A Data Oriented Introduction to Computing I	MATH 004, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 006A, may be taken concurrently or MATH 006B, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently.	Credit is awarded for one of the following CS 009A or CS 010A.	X	Х	Х	X
CS 9B+*	4 units	Data Oriented Introduction to Computing II	CS 009A; or equivalent.	Credit is awarded for one of the following CS 009B or CS 010B.	X	X	X	
ENTM 106	3 units	Insect Evolution	BIOL 100/ENTM 100 or consent of instructor.			Schedule ourse is no		ntly offered).
ENTM 107	4 units	Insect Biodiversity	BIOL 100/ENTM 100 or consent of instructor.			X		
***ENTM 108	4 units	Biology of Social Insects	BIOL 005C with a grade of C- or better.			Schedule ourse is no		ntly offered).
ENTM 109	4 units	Field Entomology	BIOL 100/ENTM 100 or equivalents or consent of instructor.				X	
ENTM 114	4 units	Aquatic Insects	BIOL 005A, BIOL 005B, BIOL 005C; or consent of instructor.	Laboratory emphasizes identification (collection) and includes a group field ecology project and two weekend field	*Check Schedule of Classes (this course is not consistently offere			
ENTM 126	4 units	Medical and Veterinary	BIOL 005B, BIOL 005C; or consent of instructor.			X		
ENTM 130	4 units	Invasion Ecology	BIOL 005C with a grade of C- or better, BIOL 102 with a grade of C- or better; or consent of instructor.			Х		
ENTM 133	4 units	Urban Entomology	BIOL 100/ENTM 100 or consent of instructor.				Х	
ENTM/MCBL 139	4 units	The Evolution of Conflict and Cooperation: Cheaters and	BIOL 005C; or consent of instructor.	++Cross-listed course.		Schedule ourse is no		ntly offered).
ENVE 121	4 units	Biological Unit Processes	ENVE 120, ENVE 142.	Credit is awarded for only one of CEE 226 or ENVE 121.			X	
ENSC 100	4 units	Introduction to Soil Science	CHEM 001C, CHEM 01LC or CHEM 01HC, CHEM 01HLC; ENSC 001, may be taken concurrently or ENSC 002, may be taken concurrently or CEE 010; or consent of instructor.		Х			
ENSC/NEM 120	4 units	Soil Ecology	BIOL 002 or BIOL 005A, BIOL 05LA; CHEM 001C, CHEM 01LC or CHEM 01HC, CHEM 1HLC; ENSC 100; or consent of instructor.	++Cross-listed course.	*Check Schedule of Classes (this course is not consistently offered			
ENSC/MCBL 133	4 units	Environmental Microbiology	BIOL 005A, BIOL 05LA or BIOL 020, BIOL 005B, BIOL 005C; or consent of instructor.	++Cross-listed course.	X			
***ENSC/BPSC 134	4 units	Soil Conditions and Plant Growth	BIOL 104/BPSC 104 or ENSC 100; or consent of instructor.	++Cross-listed course.		Schedule ourse is no		ntly offered).

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	Summer:	
ENTX 101	4 units	Fundamental Toxicology	BIOL 005A; BIOL 005B; CHEM 008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA; CHEM 008B and CHEM 08LB or CHEM 08HB and CHEM 08HLB; CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 08HLC; or consent of instructor.		*Check Schedule of Classes (this course is not consistently offer				
ENTX 154	4 units	Risk Assessment	ENTX 101; STAT 010; or equivalent; or consent of instructor.		*Check Schedule of Classes (this course is not consistently offered				
GEO 151	4 units	Principles of Paleontology	BIOL 010/GEO 003 with a grade of "C-" or better or BIOL 005C.	This class includes a lecture, laboratory, and one 1-day field trip.		k Schedule ourse is no		ntly offered).	
***GEO 160	4 units	Global Climate Change	Upper-division standing or consent of instructor; PHYS 002B or PHYS 02HB or PHYS 040B or PHYS 040HB			X			
GEO 167	4 units	Conservation Biogeography	BIOL 005C with a grade of "C-" or better or BIOL 010/GEO 003 with a grade of "C-" or better.			k Schedule ourse is no		ntly offered).	
GEO 169	4 units	California Vegetation	BIOL 005C with a grade of "C-" or better or BIOL 010/GEO 003 with a grade of "C-" or better.	This class includes a lecture, laboratory, and two 1-day field trips.	X	X			
GNBT 120	4 units	Analysis of Genomes Laboratory	BIOL 005C with a grade of C- or better, BIOL 102 with a grade of C- or better; MATH 007B or MATH 009B or MATH 09HB with a grade	Computer programming experience not required.		X			
МАТН 9С*	4 units	First-Year Calculus	MATH 009B with a grade of C- or better or MATH 09HB with a grade of C- or better or MATH 007B with a grade of C- or better.	Credit is awarded for one of the following MATH 009C, MATH 005C, or MATH 09HC.	X	X	X	Х	
MATH 10A*	4 units	Calculus of Several Variables	MATH 007B or MATH 009B or MATH 09HB with a "C-" or better or equivalent.		X	Х	X	Х	
MATH 10B*	4 units	Calculus of Several Variables	MATH 010A with a grade of "C-" or better or equivalent.		Х	X	X	Х	
MATH 46*	4 units	Introduction to Ordinary Differential Equations	MATH 007B with a grade of C- or better or MATH 09HB with a grade of C- or better or MATH 009B with a grade of C- or better.	Credit is awarded for one of the following MATH 046, EE 020A, or MATH 045.	X	X	X	Х	
MATH 149A	4 units	Probability and Mathematical Statistics	MATH 010A with a grade of "C-" or better, MATH 010B with a "C-" or better, concurrent enrollment in or completion of MATH 046 with a grade of "C-" or better.		Х			Х	
MATH 149B	4 units	Probability and Mathematical Statistics	MATH 010A with a grade of "C-" or better, MATH 010B with a grade of "C-" or better, MATH 046 with a grade of "C-" or better, MATH 149A with a grade of "C-" or better.	A continuation of MATH 149A.		X		Х	
MCBL 125	4 units	Experimental Microbiology	BIOL 102; BIOL 107A; MCBL 131; MCBL 131L; restricted to class level standing of junior, or senior; restricted to major(s) Micro biology; or consent of instructor.	Includes 1.5 hour lecture, 1 hour workshop, and 6 hour laboratory.			X		

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	Summer:
MCBL 126	3 units	Microbiomes	BIOL 005A, BIOL 05LA or BIOL 020; BIOL 005B; BIOL 005C; CHEM 008C or CHEM 08HC; CHEM 08LC or CHEM 08HLC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002C or PHYS 02HC; PHYS 02LC or PHYS 02HLC; BCH 100 or BCH 110A or BCH 110HA; STAT 010; or consent of instructor.	Credit is awarded for one of the following MCBL 126 or MCBL 226.			X	
MCBL 128	4 units	Field Mycology: Ecology, Evolution and Diversity of Fungi	BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C; or consent of instructor.	Credit is awarded for one of the following MCBL 128 or MCBL 228.		Х		
MCBL 129	4 units	Host Responses to Viral Pathogens	BIOL 005A; BIOL 05LA or BIOL 020; BIOL 005B; BIOL 005C; CHEM 008C or CHEM 08HC; CHEM 08HC; CHEM 08HC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002C or PHYS 02HC; PHYS 02LC or PHYS 02HLC; BCH 100, may be taken concurrently or BCH 110A, may be taken concurrently or BCH 110A, may be taken concurrently; or consent of instructor			Schedule (ourse is not		ntly offered).
MCBL/ENSC 133	4 units	Environmental Microbiology	BIOL 005A, BIOL 05LA or BIOL 020, BIOL 005B, BIOL 005C; or consent of instructor.	++Cross-listed course.	Х			
MCBL/ENTM 139	4 units	The Evolution of Conflict and Cooperation: Cheaters and Altruists	BIOL 005C; or consent of instructor.	++Cross-listed course.	Х			
NEM/ENSC 120	4 units	Soil Ecology	BIOL 002 or BIOL 005A, BIOL 05LA; CHEM 001C, CHEM 01LC or CHEM 01HC, CHEM 1HLC; ENSC 100; or consent of instructor.	++Cross-listed course.	Х			
PHYS 117	4 units	Advanced Mathematical Methods of Physics	MATH 010B with a grade of C- or better, MATH 046 with a grade of C- or better.	This course is strongly recommended for students with a focus on		Schedule o		ntly offered).
PHYS 130A	4 units	Classical Mechanics	MATH 009C, MATH 010A (may be taken concurrently); one of the following: PHYS 002A or PHYS 02HA with a grade of B- or better, PHYS 040A or PHYS 040HA with a grade of C- or better, PHYS 041A with a grade of C- or better.		Х			
PHYS 130B	4 units	Classical Mechanics	MATH 010A, MATH 010B (may be taken concurrently), PHYS 130A.			Х		
PHYS 132	4 units	Thermal Physics	MATH 010B; MATH 046 (may be taken concurrently); PHYS 130B.				Х	
PHYS 139L	5 units	Electronics for Scientists	One of the following: PHYS 002B or PHYS 02HB with B- or better, PHYS 040C or PHYS 040HC with a C- or better, PHYS 041B with a C- or better, or consent of instructor.		X		Х	

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	: Summer:		
PHYS 145A	4 units	Biophysics	CHEM 001C or CHEM 01HC; MATH 010B; MATH 046; one of the following: PHYS 002C or PHYS 02HC with B- or better, PHYS 041C with a C- or better, PHYS 040E with a C- or better.		*Check Schedule of Classes (this course is not consistently offere					
PHYS 145B	4 units	Biophysics	PHYS 145A; BCH 100 or BCH 110B or BCH 110HB; or consent of instructor.			*Check Schedule of Classes (this course is not consistently offered)				
***PHYS 145C	4 units	Biophysics	PHYS 145B or consent of instructor.			k Schedule ourse is no	,	s ently offered).		
PHYS 163	4 units	Atomic Physics and Spectroscopy	CHEM 113 or PHYS 156A with a C- or better, PHYS 135A with a C- or better, or consent of instructor		*Check Schedule of Classes (this course is not consistently offered)					
***PHYS 168	4 units	Energy and the Environment	MATH 010B with a grade of C- or better, PHYS 040C with a grade of C- or better or PHYS 041C with a grade of C- or better; or consent of			k Schedule ourse is no		s ently offered).		
PHYS 177	4 units	Computational Methods for Physical Sciences	CS 009A or CS 010A or CS 010B; PHYS 02DC with a grade of B- or better or PHYS 02DC with a grade of B or better or PHYS 040E with a grade of C- or better or PHYS 041C with a grade of C- or better; or consent of instructor.				X			
PSYC 112	4 units	Neural Mechanisms of Animal Behavior	CBNS 106 with a grade of "C-" or better or PSYC 110 with a grade of "C-" or better or consent of instructor.		Х	X				
STAT 10**	5 units	Introduction to Statistics	MATH 005A or MATH 006B or MATH 007A or MATH 009A or MATH 09HA.	Credit is awarded for one of the following STAT o10 or STAT 008.	X	X	X	X		
STAT 11++	5 units	Introduction to Statistical Modeling (if not being used to fulfill the Upper Division Statistics Requirement)	STAT 008 with a grade of C- or better or STAT 010 with a grade of C- or better.		X	Х	X	Х		
STAT 107++	4 units	Introduction to Statistical Computing with R	STAT 008 or STAT 010; or equivalent.		X	X		X		
STAT 110	5 units	Biostatistical Methods in Life Sciences	STAT 011 or STAT 107; or equivalent.			X				
STAT 155	4 units	Probability and Statistics for Science and Engineering	MATH 009C, may be taken concurrently or MATH 09HC, may be taken concurrently.	Credit is not awarded for STAT 155 if it has already been awarded for STAT 156A or STAT 160A.	X	X	X	X		
STAT 157	4 units	Statistical Computing with SAS	STAT 010 with a grade of C- or better, CS 010A with a grade of C- or better or STAT 107 with a grade of C- or better; or equivalent.			Schedule ourse is no	,	s ently offered).		

Course Number:	Units:	Course Title:	Pre-requisites or Co-requisites:	Important Advising Notes:	Fall:	Winter:	Spring:	Summer:
STAT 160A	4 units	Elements of Probability and Statistical Theory	MATH 009C or MATH 09HC (may be taken concurrently).	Credit is awarded for one of the following STAT 160A or STAT 156A.	Χ			
STAT 160B	4 units	Elements of Probability and Statistical Theory	STAT 160A with a grade of "C-" or better.	Credit is awarded for one of the following STAT 160B or STAT 156B.		X		
STAT 160C	4 units	Elements of Probability and Statistical Theory	STAT 160B with a grade of "C-" or better.				Х	
STAT 161	4 units	Introduction to Probability Models	STAT 156B with a grade of C- or better or STAT 160B with a grade of C- or better.		*Check Schedule of Classes (this course is not consistently offe			ntly offered).
STAT 167	4 units	Introduction to Data Science	STAT 107 with a grade of C- or better; CS 010A with a grade of C- or better.				X	
STAT 169++	4 units	Design of Experiments	STAT 107; STAT 156B or STAT 160B; or equivalent.				Х	
STAT 170++	4 units	Regression Analysis	STAT 107; STAT 156B or STAT 160B; or equivalent.		X			
STAT 171	4 units	General Statistical Models	STAT 170.			X		

Related Area Courses can only be used for Related Courses Coverage (16 units maximum).

****For BIOL 194 and BIOL 197 and BIOL 199 there is a 6 unit maximum (effective Fall 2022). Please see your advisor if you would like to have non-BIOL research applied to the Related Area.

+Approved Related Area Course offerings, CS 9A/9B effective F22. CS 10A/B are no longer Related Area course offerings effective F23 forward for BIOL majors. ++Courses were formerly STAT100B, STAT147, STAT170B, and STAT170A respectively.

*A lower division transfer course will satisfy the same number of units in the related area as the equivalent UCR course.

++Cross-listed Courses: A cross-listed course is when a course (with the same content) is taught under two or more departments. Cross-listed courses usually have the same course number. Refer to the Schedule of Classes for further details (review the course description).

Refer to the Schedule of Classes for further cross-listed course details (review the course description).

-Schedule subject to change.

-Please refer to the most recent UCR catalog for all up to date curriculum details (registrar.ucr.edu/registering/catalog).

Revised December 12, 2024.