UNIVERSITY AT ALBANY
State University of New York

Office of the Provost and Senior Vice President for Academic Affairs

1/19/2024

Melur K. Ramasubarmanian Ph.D.,
Executive Vice Chancellor for Academic Affairs & Provost
State University of New York
System Administration
State University Plaza
Albany, NY 12246

Dear Dr. Ramasubramanian,

On behalf of the faculty at the University at Albany, College of Arts and Sciences and Massry School of Business, I am pleased to submit our proposal for an update to our Interdisciplinary Studies BS registration.

This proposal has been considered and approved through our campus governance system. Should there be a need for additional information or clarification to facilitate processing, please contact Kaitlyn Beachner at kbeachner@albany.edu.

Thank you for your consideration and assistance.

Sincerely,

Carol Kim, Ph.D.
Provost and Senior Vice President for Academic Affairs

Attachment

c. Dean Jeanette Altarriba, College of Arts and Sciences
Interim Dean Kevin Williams, Massry School of Business
Vice Provost & Dean JoAnne Malatesta, Undergraduate Education

University Hall, Suite 308
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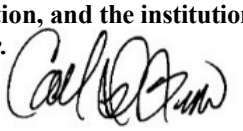
Program Revision Proposal: Changes to an Existing Program

Form 3A

Version 2016-10-13

SUNY approval and SED registration are required for many changes to registered programs. To request a change to a registered program leading to an undergraduate degree, a graduate degree, or a certificate that does not involve the creation of a new program,[1] a Chief Executive or Chief Academic Officer must submit **a signed cover letter and this completed form** to the SUNY Provost at *program.review@suny.edu*.

Section 1. General Information		
a) Institutional Information	Institution's 6-digit SED Code:	**210500**
	Institution's Name:	University at Albany
	Address:	1400 Washington Ave Albany, NY 12222
b) Program Locations	List each campus where the entire program will be offered (with each institutional or branch campus 6-digit SED Code): 210500	
	List the name and address of off-campus locations (i.e., extension sites or extension centers) where courses will offered, **or check here [X] if not applicable**:	
c) Registered Program to be Changed	Program Title:	Interdisciplinary Studies
	SED Program Code	04653
	Award(s) (e.g., A.A., B.S.):	BS
	Number of Required Credits:	Minimum [120] If tracks or options, largest minimum [ ]
	HEGIS Code:	4901
	CIP 2010 Code:	30.9999
	Effective Date of Change:	August 1, 2024
	Effective Date of Completion[2]	June 1, 2028
d) Campus Contact	Name and title: Kaitlyn Beachner, Staff Associate for Undergraduate Programs Telephone and email: 518-442-3941 kbeachner@albany.edu	
e) Chief Executive or Chief Academic Officer Approval	**Signature affirms that the proposal has met all applicable campus administrative and shared governance procedures for consultation, and the institution's commitment to support the proposed program.** ***E-signatures are acceptable.*** Name and title: Signature and date:  1/19/2024	
	If the program will be registered jointly[3] with one or more other institutions, provide the following information for <u>each</u> institution:	
	Partner institution's name and 6-digit SED Code: Name, title, and signature of partner institution's CEO (or **append** a signed letter indicating approval of this proposal):	

[1] To propose changes that would create a new program, Form 3B, Creating a New Program from Existing Program(s), is required.

[2] If the current program(s) must remain registered until enrolled students have graduated, the anticipated effective date by which continuing students will have completed the current version of the program(s).

[3] If the partner institution is non-degree-granting, see SED's CEO Memo 94-04.

Section 2. Program Information

Section 2.1. Changes in Program Content

[ ] No changes in program content. *Proceed to Section 2.2.*

a) Check all that apply. Describe each proposed change and why it is proposed.

[X] Cumulative change from SED's last approval of the registered program of one-third or more of the minimum credits required for the award (e.g., 20 credits for associate degree programs, 40 credits for bachelor's degree programs)
[ ] Changes in a program's focus or design
[X] Adding or eliminating one or more options, concentrations or tracks
[ ] Eliminating a requirement for program completion (such as an internship, clinical placement, cooperative education, or other work or field-based experience). Adding such requirements must remain in compliance with SUNY credit cap limits.
[ ] Altering the liberal arts and science content in a way that changes the degree classification of an undergraduate program, as defined in Section 3.47(c)(1-4) of Regents Rules

Description of Change:

Due to this being an Interdisciplinary BS, with faculty-initiated concentrations, each concentration is separate and managed by faculty of different departments. Changes to each concentration are listed below separately.

Changes for Biochemistry & Molecular Chemistry Concentration:

Changes to this program have occurred to reflect some course changes that are occurring, faculty expertise changes due to changes in faculty from retirements and hires, and the desire to add elective options to allow for some student choice. Our general biology courses have been reworked and changed, the course number changed, and we created a separate laboratory course that compliments the general biology courses. We no longer offer general biology III and IV, as they were considered in the reworking of courses and new courses at the 200 and 300 level cover topics that were within the General Biology III and IV. Introduction to Genetics was added, to ensure that genetics was still a thoroughly covered topic after the removal of General Biology III and IV. Physical Chemistry for Biochemical Sciences courses were replaced with Physical Chemistry courses or Biophysical Chemistry courses, to allow for student choice. Physics and Math requirements added advanced courses as options for students more advanced in these areas. The additional elective requirement was made to allow students further experience in areas of their interest.

Changes for Environmental Science Concentration:

Changes in this program have occurred due to expansion of faculty in our Atmospheric Science, Environmental Science, and Geology departments. With faculty bringing new expertise, new courses have been created, resulting in several different courses and concentrations within the concentration. Also, in the past 20 years, the discipline has developed, and student interests have changed, resulting in changes to our specializations within the Environmental Science Concentration. Eight new courses in Atmospheric Science and Environmental Science now serve as the main core to the concentration. These courses provide an in-depth education in the atmospheric structure, environmental statistics, meteorological and environmental measurements, environmental science, and the earth and its oceans. Honors Calculus was added to the math options to accommodate for students at the advanced mathematical level. General Biology I has evolved into a new course, which replaces it. A new laboratory for the General Biology course was added as well. To ensure that students have an in-depth education and understanding of biological aspects of environmental sciences, additional biology courses were added to the major. Our Chemistry department added a new course that incorporates the lab into the General Chemistry I course, so we added that option to the requirements. We also added General Chemistry II and its lab, to ensure students have more foundations in chemistry. The Physics requirement added an honors course option, to include students at the

advanced level. We also removed General Physics II, due to adding General Chemistry II to the requirements. We decided to change specialization options within this concentration. We no longer offer the Earth Science, Atmospheric Science, and Biology specializations due to changes in student interests and expertise changes within our departments. We kept the Geography Specialization, and added the Ecosystems specialization, Climate Change specialization, and Sustainability Science and Policy specialization.

Changes for the Financial Market Regulation Concentration:

Changes have occurred in the Financial Market Regulation concentration primarily due to keeping up with the technology needs of the financial market industry. Most courses are the same, except our Information Management and Data Analysis courses have changed. BITM 215 Information Technologies for Business course is now required as general course teaching students' various technologies used within business. Students then have the option between three courses to choose from, allowing students to pick a course based on their interest levels and goals. The elective option, allows students to choose from five courses, helping students choose a course that meets their educational and career goals. Our Financial Accounting course now has an honors version of the course, and we allowed that to be taken to give credit to our honors students. We also added AMAT 108, Elementary Statistics to the requirements to prepare students for upper-division courses.

Changes for the Bioinstrumentation Concentration:

The Bioinstrumentation Concentration is no longer being offered due to retirements by faculty.

b) Provide a side-by-side comparison of all the courses in the existing and proposed revised program that clearly indicates all new or significantly revised courses, and other changes.

Interdisciplinary Studies BS with a Faculty-Initiated Concentration in Biochemistry & Molecular Biology:	
1992 Curriculum – 65 Credits:	***2024 Proposed Curriculum – 66 Credits:***
BIO 110F - General Biology I (4)	ABIO 130 – General Biology: Molecular and Cell Biology and Genetics (3) ***AND*** ABIO 201 – Introduction to Biological Investigations Lab I (1)
BIO 111N – General Biology II (4)	ABIO 131 – General Biology: Ecology, Evolution, and Physiology (3) ***AND*** ABIO 202Z – Introduction to Biological Investigations Lab II (1)
BIO 210 – General Biology III (4)	*Course Removed*
BIO 211 – General Biology IV (4)	*Course Removed*
	ABIO 212Y – Introductory Genetics (4)
BIO 312 – Molecular Biology (3)	ABIO 425 – Molecular Biology (3) **Course number changed*
BIO 313 – Laboratory in Molecular Biology (2)	ABIO 426 – Laboratory in Molecular Biology (2) **Course number changed*
BIO 365 – Biological Chemistry (3)	ABIO 365 – Biological Chemistry (3)
BIO 366 – Biological Chemistry II (3)	ABIO 366 – Biological Chemistry II (3)
	ABIO 367 – Biochemistry Laboratory (2)
CHM 120N – General Chemistry I (3)	ACHM 115 – General Chemistry I (4) ***OR*** TCHM 130 – Advanced General Chemistry I (3) ***AND*** ACHM 124 - General Chemistry Laboratory I (1)
CHM 121N – General Chemistry II (3)	ACHM 116 – General Chemistry II (4) ***OR*** TCHM 131 – Advanced General Chemistry II (3) ***AND*** ACHM 125 – General Chemistry Laboratory II (1)
CHM 122A – General Chemistry Lab I (1)	**Lab course number changed to ACHM 124 listed above with TCHM130*
CHM 122B – General Chemistry Lab II (1)	**Lab course number changed to ACHM125 listed above with TCHM131*
CHM 216A – Organic Chemistry I (3)	ACHM 220 – Organic Chemistry I (3) **Course number changed*
CHM 216B – Organic Chemistry II (3)	ACHM 221 – Organic Chemistry II (3) **Course number changed*
CHM 217A – Organic Chemistry Lab I (1)	ACHM 222 – Organic Chemistry Lab I (1) **Course number changed*
CHM 217B – Organic Chemistry Lab II (1)	ACHM 223 – Organic Chemistry Lab II (1) **Course number changed*
CHM 330A – Physical Chemistry for Biochemical Sciences I (3)	*Course Removed*
CHM 330B – Physical Chemistry for Biochemical Sciences II (3)	*Course Removed*
	ACHM 350 – Physical Chemistry I (3) OR ACHM 444 – Biophysical Chemistry I (3)
	ACHM 351 – Physical Chemistry II (3) OR ACHM 445 – Biophysical Chemistry II (3)
PHY 120N – Introduction to Physics I (3)	APHY 140 – Physics I: Mechanics (3) OR TPHY 141 – Honors Physics I: Mechanics (3) OR

	APHY 142 - Physics I: Advanced Mechanics (3)
PHY 124N – Introduction to Physics II (3)	APHY 150 – Physics II: Electromagnetism (3) OR TPHY 151 – Honors Physics II: Electromagnetism (4) OR APHY 152 - Physics II: Advanced Electromagnetism (3)
MAT 112Y – Calculus I (4)	AMAT 112 – Calculus I (4) OR AMAT 118 – Honors Calculus I (4)
MAT 113Y – Calculus II (4)	AMAT 113 – Calculus II (4) OR AMAT 119 – Honors Calculus II (4)
	An additional course pair at 300+. Must be completed in one of specific course pairs listed below or 5 credits of supervised research.
	ABIO 301 - Molecular Cell Biology (3) ***AND*** ABIO 302 - Cell Biology Lab (2)
	ABIO 301 - Molecular Cell Biology (3) ***AND*** ABIO 344 – Mammalian Anatomy Lab (2)
	ABIO 303 – Developmental Biology (3) ***AND*** ABIO 305 – Developmental Biology Lab (2)
	ABIO 314 – Microbiology (3) ***AND*** ABIO 315 – Microbiology Lab (2)
	ABIO 335 – Immunology (3) ***AND*** ABIO 336 – Immunology Lab (2)
	ABIO 341 – Neurobiology (3) ***AND*** ABIO 342 – Neurophysiology Lab (2)
	ABIO 410 – Human Physiology (3) ***AND*** ABIO 411 – Human Physiology Lab (2)
	ABIO 309 – Genetics Lab (2) ***AND*** 300+ Biology Lecture for 3 or more credits
	ABIO 478 – Instrumental & Biochemical Analysis ***AND*** 300+ Biology Lecture for 3 or more credits
	ABIO 399 – Undergraduate Supervised Research for Juniors (5 credits over 2 semester)
	ABIO 499 – Undergraduate Supervised Research for Seniors (5 credits over 2 semester)
	ACHM 352Z – Physical Chemistry Lab (3) ***AND*** 2 Credit or more 300+ Chemistry or Biology Course
	ACHM 417 – Advanced Synthesis Lab (3) ***AND*** 2 Credit or more 300+ Chemistry or Biology Course
	ACHM 429 – Instrumental Analysis (3) ***AND*** ACHM 431 – Instrumental Analysis Lab (2)
	ACHM 425 – Introduction to Undergraduate Research in Chemistry (2) ***AND*** ACHM 426 Undergraduate Research in Chemistry (3)
	ACHM 447 – Advanced Forensic Chemistry (3) ***AND*** ACHM 448 - Advanced Forensic Chemistry I Lab (2)

Interdisciplinary Studies BS with a Faculty-Initiated Concentration in Environmental Science:		
2002 Curriculum - 65-66 Credits:	**2024 Curriculum – 70-71 Credits:**	
Core Curriculum (46 Credits):	*Core Curriculum (49 Credits):*	
AATM 100N – The Atmosphere (3)	*Course Removed*	
	AATM 210 – Atmospheric Structure, Thermodynamics, and Circulation (3)	
	AATM/AENV 315 – Environmental Statistics and Computation (4)	
	AATM 327 – Meteorological and Environmental Measurement (3)	
	AENV 105 – Introduction to Environmental Science (3)	
	AENV 106 – Introduction to Environmental Science Laboratory (1)	
	AENV 221 – Understanding the Earth (3)	
	AENV 302 – Ocean Science (3)	
	AENV 490 – Major Topics in Environmental Science (3)	
AGEO 100N – Planet Earth (3)	*Course Removed*	
AGEO/AGOG 201 – Environmental Analysis (3)	*Course Removed*	
AGEO 210 – Earth Materials (3)	*Course Removed*	
AGEO 250 – Energy and Resources (3)	*Course Removed*	
AGEO 350 – Environmental Geochemistry (4)	*Course Removed*	
AGOG 330 – Principles of Environmental Management (3)	*Course Removed*	
AMAT 111 - Algebra and Calculus II (4) OR AMAT 112 – Calculus I (4)	AMAT 111 - Algebra and Calculus II (4) OR AMAT 112 – Calculus I (4) OR TMAT 118 – Honors Calculus Honors College (4)	
AMAT 113 – Calculus II (4)	*Course Removed*	
AMAT 108 – Statistics (3)	*Course Removed*	
ABIO 110N/F – General Biology I (4)	*Course Evolved into ABIO 130*	
	ABIO 130 – General Biology: Molecular and Cell Biology and Genetics (3)	
	ABIO 131 – General Biology: Ecology, Evolution, and Physiology (3)	
	ABIO 201- Introduction to Biological Investigations I (1)	
	ABIO 202 – Introduction to Biological Investigations II (1)	
	ABIO 212Y – Introductory Genetics (4)	
	ABIO 330 – Principles of Ecology and Evolution (3)	
ACHM 120N – General Chemistry I (3)	*Select one:*	ACHM 120 – General Chemistry I (3) AND ACHM 124 – General Chemistry I Lab (4)
		ACHM 115 – General Chemistry I and Lab (4)
	Select one:	ACHM 121 – General Chemistry II (3) AND ACHM 125 – General Chemistry II Lab
		ACHM 116 – General Chemistry II and Lab (4)
APHY 105N – General Physics I (3)	APHY 140 – Physics I: Mechanics (3) OR TPHY 141 – Honors Physics I: Mechanics (3)	
APHY 108N – General Physics II (3)		
Completion of one track listed below, consisting of a minimum of 19-20 credits.	***Completion of one specialization listed below, consisting of a minimum of 21-22 credits.***	
Earth Science Specialty Track:	*Track Removed*	
AGEO 212 – Earth Materials Laboratory (1)		

AGEO 260 – Earth Surface Processes & Hazards (3)		
AGEO 420 – Instrumentation Analysis in Environmental Science (3)		
Select a minimum of 12 credits from these course options:	ABIO 316 – Biogeography (3)	
	AGEO 330 – Structural Geology I (3)	
	AGEO 435 – Geohydrology (3)	
	AGEO 450 – Paleoclimatology (3)	
	AGEO 466 – Marine/Estuary Systems (3)	
	AGEO 497 – Independent Study within Geology (1-3)	
	AGEO 498 – Honors Research (3)	
	APHY 202N – Environmental Physics (3)	
Atmospheric Science Specialty Track:		*Track Removed*
AATM 210Z – Atmospheric Structure (4)		
AGEO 260 – Earth Surface Processes and Hazards (3)		
Select a minimum of 12 credits from these course options:	AATM 211 – Weather Analysis and Forecasting (4)	
	AATM 304/Z – Air Quality (3)	
	AATM 305 – Global Physical Climatology (3)	
	AATM 307 – Atmospheric Chemistry (3)	
	AATM 311 – Severe and Unusual Weather Analysis & Forecasting (4)	
	AATM 335 – Meteorological Remote Sensing (3)	
	AATM 443 – Meteorological Instrumentation & Measurement (2)	
	AATM 408B – Hydrometeorology (3)	
Optional elective options can used for the above requirement, but a maximum of 6 credits can be used towards the above 12:	AGEO 420 – Instrumentation Analysis in Environmental Science (3)	
	AGEO 450 – Paleoclimatology (3)	
	AGOG 304 – Climatology (3)	
	ABIO 316 – Biogeography (3)	
	APHY 202N – Environmental Physics (3)	
Biology Specialty Track:		*Track Removed*
ABIO 111N – General Biology II (4)		
ABIO 320 – Ecology (3)		
Select a minimum of 12 credits from these course options:	ABIO 212 – Introductory Genetics (4)	
	ABIO 314 – General Bacteriology (3)	
	ABIO 316 – Biogeography (3)	
	ABIO 319/Z – Field Biology (3)	
	ABIO 325 – Comparative Anatomy of Chordates (4)	
	ABIO 365 – Biological Chemistry (3)	
	ABIO 366 – Biological Chemistry II (3)	
	ABIO 402 – Evolution (3)	
	ABIO 422 – Biological Architecture (3)	
	ABIO 432 – Animal Behavior (3)	
	ABIO 436 – Sensory Worlds (3)	

	ABIO 442 – Restoration Ecology (3) AND ABIO 443 – Restoration Ecology Lab (1)		
	ABIO 445 – Experimental Ecology (3)		
	ABIO 450 – Biodiversity (3)		
	ABIO 455 – Plant Ecology (4)		
	ABIO 468 – Behavioral Ecology (3)		
Geography Specialty Track:		**Geography Specialization:**	
AGEO 260 – Earth Surface Processes and Hazards (3)		*Course Removed*	
		AGOG/AUSP 220 – Introduction to Urban Geography (3)	
		AGOG 290 – Introduction to Cartography (4)	
		AGOG 496/AUSP 456 – Geographic Information Systems (3)	
Select a minimum of 16 credits from these course options:	AGOG 290 – Introduction to Cartography (4)	*Select a minimum of 12 credits from these course options:*	*Course Removed*
	AGOG 293 – Use and Interpretation of Aerial Photographs (3)		*Course Removed*
	AGOG 304 – Climatology (3)		AGOG 304 – Climatology (3)
			AGOG/ALCS 354 – Environmental and Development (3)
			AGOG/AUSP 375 – Methods of Urban Analysis (3_
	AGOG 385 – Introduction to Remote Sensing of the Environment (4)		*Course Removed*
	AGOG 414 – Computer Mapping (3)		AGOG 414 – Computer Mapping (3)
			AGOG 484 Remote Sensing I
	AGOG 485 – Advanced Remote Sensing of the Environment (3)		AGOG 485 –Remote Sensing II(3)
	AGOG 496 – Geographic Information Systems (3)		*Course Removed*
	AGEO 420 – Instrumentation Analysis in Environmental Science (3)		*Course Removed*
	AGEO 435 – Geohydrology (3)		*Course Removed*
		Ecosystems Specialization:	
		ABIO 212Y – Introductory Genetics (4)	
		ABIO 401 – Ecology (3)	
		Select a minimum of 12 credits from these course options: *Note: Maximum of 6 credits from*	AANT 418 – Culture, Environment, and Health (3)
			AANT 312 Human Population Genetics (3)
			AATM 301 – Surface Hydrology and Hydrometeorology (3)
			ABIO 329 – Genetics of Human Disease (3)
			ABIO 402 – Evolution (3)
			AENV 250 – Sustainable Development: Energy and Resources (3)
			AENV 404 – The Adirondack Environment (3)
			AENV 480 – Special Topics in Environmental Science (1-4)
			AENV 496 – Environmental Internships (1-3)
			AGOG 424 – Landscape Ecology (3)
			AGOG/AUSP 433Y – Urban Ecology (3)
			AGOG 496/AUSP 456 – Geographic Information Systems (3)

	*courses marked *	*RPAD 366 – International Environmental Policy (3)
		*HSPH 321- Global Environmental Issues and Their Effect on Human Health (3)
		HSPH 332 – Introduction to Biostatistics (3)
	Climate Change Specialization:	
	AATM 306 – Climate Variability and Change (3)	
	AATM 405 – Water and Climate Change (3)	
	AENV 415 – Climate Laboratory (3)	
	AENV 450 – Paleoclimatology (3)	
	Select a minimum of 9 credits from these course options: *Note: Maximum of 6 credits from courses marked ** **Sustainability Science & Policy Specialization:**	AATM 301 – Surface Hydrology and Hydrometeorology (3)
		AATM 304 – Air Quality and Air Pollution Policy (3)
		AATM 307 – Introduction to Atmospheric Chemistry (3)
		AATM 335 – Meteorological Remote Sensing (3)
		AATM 413 – Weather, Climate Change, and Societal Impacts (3)
		AATM 414 – Air Pollution Meteorology (3)
		AENV 404 – The Adirondack Environment (3)
		AENV 496 – Environmental Internships (1-3)
		AMAT 113 – Calculus II (4)
		*RPAD 366 – International Environmental Policy (3)
		*RPOS 266– International Political Economic Science (3)
		*RPOS 399– Selected Topics (3)
		*HSPH 321- Global Environmental Issues and Their Effect on Human Health (3)
	AATM 304 – Air Quality and Air Pollution Policy (3)	
	AENV 250 – Sustainable Development: Energy and Resources (3)	
	RPOS 399 – Selected Topics (3)	
	Select a minimum of 12 credits from these course options	AANT 418 – Culture, Environment, and Health (3)
		AATM 405 – Water and Climate Change (3)
		AATM 413 – Weather, Climate Change, and Societal Impacts (3)
		AENV 404 – The Adirondack Environment (3)
		AENV 480 – Special Topics in Environmental Science (1-4)
		AENV 496 – Environmental Internship (1-3)
		AGOG/AUSP 220 – Introductory Urban Geography (3)
		AGOG/AUSP 430 – Environmental Planning (3)
		AGOG 460 – People, Place, and Power (3)
		AGOG 496/AUSP 456 – Geographic Information Systems (3)

Interdisciplinary Studies BS with a Faculty-Initiated Concentration in Financial Market Regulation:	
2008 Curriculum - (37 Credits)	**2024 Curriculum - (39 Credits)**
Business and Finance Courses	***Business and Finance Courses***
BACC 211 Financial Accounting (3)	BACC 211 Financial Accounting (3)
	BACC 313 Financial Statement Analysis (3)
BFIN 300 Financial Management (3)	BFIN 300 Financial Management (3)
	BFIN 301 Corporate Financial Policy and Strategy (3)
BFIN 333 Investment Management (3)	BFIN 333 Investment Management (3)
BFIN 375 Money and Capital Markets (3)	BFIN 375 Money and Capital Markets (3)
Public Policy and Law Courses	***Public Policy and Law Courses***
RPAD 236 Institutions and Policy in Business Regulation (3)	BFIN 236 Crisis and Regulation in Financial Markets (3)
RPAD 435 Fundamentals of Securities law (3)	BFIN/RPAD 435 Law in Financial Market Regulation (3)
RPAD 436 Regulation of Securities Markets (3)	*Course Removed*
	BFIN 439/RPAD 436 Technology in Financial Market Regulation (3)
Information Management and Data Analysis Courses	***Information Management and Data Analysis Courses***
ICSI 201 Introduction to Computer Science (4)	*Course Removed*
IINF 201 Introduction to Information Technology (3)	*Course Removed*
BITM 330 Business Information Systems and Technologies (3)	*Course Removed*
BITM 331 Business Application Development (3)	*Course Removed*
Select One: BITM 416 Communication, Networking, and Security (3)	*Course Removed*
Select One: IIST 423 Networking Essentials (3)	*Course Removed*
	CINF 108 Programing for Problem Solving (3)
	BITM 215 Information Technologies for Business (3)
	BITM 330 Improving Business Performance with Information Technologies (3)
	Information Management and Data Analysis Courses
	AMAT 108 – Elementary Statistics (3)

Interdisciplinary Studies BS with a Faculty-Initiated Concentration in Bioinstrumentation:	
2014 Curriculum – 84 Credits	**2024– Concentration No Longer Offered**
Introductory Science & Math Courses:	
A BIO 120 General Biology I (3)	
A BIO 121 General Biology II (3)	
A BIO 201 General Biology I Lab (1)	
A BIO 202Z General Biology II Lab (1)	
A BIO 212Y Introductory Genetics (4)	
A BIO 217 Cell Biology (3)	
A CHM 120 General Chemistry I (3)	
A CHM 124 General Chemistry I Laboratory (1)	
A CHM 121 General Chemistry II (3)	
A CHM 125 General Chemistry II Laboratory (1)	
A CHM 220 Organic Chemistry I (3)	
A CHM 222 Organic Chemistry Laboratory I (1)	
A MAT 108 Elementary Statistics (3)	
A MAT 112 Calculus I (4)	
A PHY 140 Physics I: Mechanics (3)	
A PHY 145 Physics Lab I (1)	
Public Health Courses:	
HSPH 201 Introduction to Public Health (3)	
HSPH 231 Concepts in Epidemiology (3)	
HSPH 332 Introduction to Biostatistics: Collection, Analysis, & Interpretation of Public Health Data (3)	
HBMS 505 – Biological Basis of Public Health (3)	
Bio-Instrumentation Courses:	
HBMS 310 Molecular and Genomic Approaches in Biotechnology I (4)	
HBMS 311 Molecular and Genomic Approaches in Biotechnology II (4)	
HBMS 312 Proteomic Methodologies in Biotechnology (4)	
HBMS 314 Animal and Cell Culture Model Systems (4)	
Choose 2 Courses (6 credits) listed below:	
HBMS 410 – Instrumentation in Biotechnology Research Internship, Molecular Core Lab (3)	
HBMS 411 Instrumentation in Biotechnology Research Internship, Proteomics Core Lab (3)	
HBMS 412 Instrumentation in Biotechnology Research Internship, Genomics Core Lab (3)	
HBMS 414 Instrumentation in Biotechnology Research Internship, Cell Analysis Core Lab (3)	
HBMS 415 Instrumentation in Biotechnology Research Internship, Academic Lab (4)	
Bio-Instrumentation Internship:	
HBMS 420 – Bio-Instrumentation Cooperative Training Internship (Biotechnology Company/Academic Lab)	

c) For each new or significantly revised course, **provide** a syllabus at the end of this form, and, on the ***SUNY Faculty Table*** provide the name, qualifications, and relevant experience of the faculty teaching each new or significantly revised course. NOTE: *Syllabi for all courses should be available upon request. Each syllabus should show that all work for credit is college level and of the appropriate rigor. Syllabi generally include a course description, prerequisites and corequisites, the number of lecture and/or other contact hours per week, credits allocated (consistent with SUNY policy on credit/contact hours), general course requirements, and expected student learning outcomes.*

d) What are the additional costs of the change, if any? If there are no anticipated costs, explain why.

Cost Changes for Biochemistry & Molecular Chemistry Concentration:
No change in cost due to existing faculty teaching all courses in the concentration.

Cost Changes for Environmental Science Concentration:
No change in cost due to existing faculty teaching all courses in the concentration.

Cost Changes for Financial Market Regulation Concentration:
No change in cost due to existing faculty teaching all courses in the concentration.

Section 2.2. Other Changes

Check all that apply. Describe each proposed change and why it is proposed.

[ ] Program title
[ ] Program award
[ ] Mode of delivery
NOTES: *(1) If the change in delivery enables students to complete 50% of more of the program via distance education, submit a Distance Education Format Proposal* as part of this proposal. *(2) If the change involves adding an accelerated version of the program that impacts financial aid eligibility or licensure qualification, SED may register the version as a separate program.*
[ ] Format change(s) (e.g., from full-time to part-time), based on SED definitions, for the **entire** program
1) State proposed format(s) and consider the consequences for financial aid
2) Describe availability of courses and any change in faculty, resources, or support services.
[ ] A change in the total number of credits in a certificate or advanced certificate program
[ ] Any change to a registered licensure-qualifying program, or the addition of licensure qualification to an existing program. **Exception:** Small changes in the required number of credits in a licensure-qualifying program that do not involve a course or courses that satisfy one of the required content areas in the profession.

Section 3. Program Schedule and Curriculum

a) For **undergraduate programs**, complete the ***SUNY Undergraduate Program Schedule*** to show the sequencing and scheduling of courses in the program. If the program has separate tracks or concentrations, complete a ***Program Schedule*** for each one.

NOTES: *The* ***Undergraduate Schedule*** *must show* ***all curricular requirements*** *and demonstrate that the program conforms to SUNY's and SED's policies.*

- *It must show how a student can complete all program requirements within SUNY credit limits, unless a longer period is selected as a format in Item 2.1(c): two years of full-time study (or the equivalent) and 64 credits for an associate degree, or four years of full-time study (or the equivalent) and 126 credits for a bachelor's degree. Bachelor's degree programs should have at least 45 credits of upper division study, with 24 in the major.*
- *It must show how students in A.A., A.S. and bachelor's programs can complete, within the first two years of full-time study (or 60 credits), no fewer than 30 credits in approved SUNY GER courses in the categories of Basic Communication and Mathematics, and in at least 5 of the following 8 categories: Natural Science, Social Science, American History, Western Civilization, Other World Civilizations, Humanities, the Arts and Foreign Languages*
- *It must show how students can complete Liberal Arts and Sciences (LAS) credits appropriate for the degree.*
- *When a SUNY Transfer Path applies to the program, it must show how students can complete the number of SUNY Transfer Path courses shown in the Transfer Path Requirement Summary within the first two years of full-time study (or 60 credits), consistent with SUNY's Student Seamless Transfer policy and MTP 2013-03.*
- *Requests for a program-level waiver of SUNY credit limits, SUNY GER and/or a SUNY Transfer Path require the campus to submit a Waiver Request –with compelling justification(s).*

EXAMPLE FOR ONE TERM: Undergraduate Program Schedule

Term 2: Fall 20xx	Credits per classification						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Prerequisite(s)**
ACC 101 Principles of Accounting	4			4	4		
MAT 111 College Mathematics	3	M	3	3			MAT 110
CMP 101 Introduction to Computers	3						
HUM 110 Speech	3	BC	3			X	
ENG 113 English 102	3	BC	3				
Term credit total:	16	6	9	7	4		

b) *For* ***graduate programs****, complete the* ***SUNY Graduate Program Schedule****. If the program has separate tracks or concentrations, complete a* ***Program Schedule*** *for each one.*

NOTE: *The* ***Graduate Schedule*** *must include all curriculum requirements and demonstrate that expectations from Part 52.2(c)(8) through (10) of the Regulations of the Commissioner of Education are met.*

SUNY Undergraduate Program Schedule (***OPTION: You can paste an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award:_____Interdisciplinary B.S. with a Concentration in Biochemistry & Molecular Biology

Indicate **academic calendar type**: [X] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):

a) Label each term in sequence, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)

b) Name of SUNY Transfer Path, if one exists: _____ See Transfer Path Requirement Summary for details

c) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed. **Complete all columns that apply to a course.**

Term 1:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
ABIO 130 – General Biology: Molecular and Cell Biology and Genetics	3	NS	3	3		X	
AMAT 112 – Calculus I or AMAT 118 – Honors Calculus I	4	MS	4	4		111 & 118 NEW	
ACHM 115 – General Chemistry I and lab OR TCHM 130 – Advanced General Chemistry I AND ACHM 124 General Chemistry Laboratory I	4	NS	3	3			
UUNI 110 – Writing and Critical Inquiry	3	COM	3				
Term credit totals:	14	14	14	11			

Term 2:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
ABIO 131 – General Biology: Ecology, Evolution, And Physiology	3	NS	3	3		X	ABIO 130
ACHM 116 – General Chemistry II and Lab OR TCHM 131 – Advanced General Chemistry II and ACHM 125 – General Chemistry Laboratory II	4	NS	3	3			ACHM 115 or TCHM 130
General Education: Humanities	3	HU	3				
General Education: Arts	3	AR					
General Education: American History	3	AH	3				
Term credit totals:	16	16	13	9			

Term 3:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
ABIO 201 – Introduction to Biological Investigations Lab I	1	NS	1	1		X	ABIO 130
ABIO 212Y – Introductory Genetics	4		4	4		X	ABIO 130 AND 131
AMAT 113 – Calculus II or AMAT 118 – Honors Calculus II	4	MS	4	4		118 NEW	AMAT 111 or 112
General Education: World Language	3	WL	3				
General Education: Social Science	3	SS	3				
Term credit totals:	15	11	15	9			

Term 4:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
ABIO 202Z – Introduction to Biological Investigations Lab II	1	NS	1	1		X	ABIO 131
ACHM 220 – Organic Chemistry I	3		3	3			ACHM 121 or TCHM 131
ACHM 222 – Organic Chemistry Lab I	1		1	1			CO – ACHM 220
General Education: International Perspective	3	OW	3				
APHY 140 – Physics I: Mechanics or TPHY 141 – Honors Physics I: Mechanics or APHY 142 – Physics I: Advanced Mechanics	3	NS	3	3			
General Education: Diversity; Equity, Inclusion, and Social Justice	3	DV	3				
Term credit totals:	14	10	14	8			

Term 5:	See KEY.

Term 6:	See KEY.

Course Number & Title	Cr	GER	LAS	Maj	TPath	New	Co/Prerequisites
ACHM 221 – Organic Chemistry II	3		3	3			ACHM 220
ACHM 223 – Organic Chemistry II Lab	1		1	1			CO – ACHM 223
APHY 150 – Physics II: Electromagnetism or TPHY 151 – Honors Physics II: Electromagnetism or APHY 152 – Physics II: Advanced Electromagnetism	3	NS	3	3		X	
Upper Division Free Elective	3						
Upper Division Free Elective	3						
Free Elective	3						
Term credit totals:	16	3	7	7			

Course Number & Title	Cr	GER	LAS	Maj	TPath	New	Co/Prerequisites
ABIO 365 – Biological Chemistry	3		3	3			ACHM 220 and 222
ABIO 367 – Biochemistry Laboratory	2		2	2			CO – ABIO 365
ABIO 435 – Molecular Biology	3		3	3			PRE – ABIO 212Y CO – ABIO 365
ABIO 436 – Laboratory in Molecular Biology	2		2	2			PRE: ABIO 201, 202Z, and 212Y CO – ABIO 365 & ABIO 435
ACHM 350 – Physical Chemistry I or ACHM 444 Biophysical Chemistry I	3		3	3		X	ACHM 221 and APHY 150
Upper Division Free Elective	3						
Term credit totals:	16		13	13			

Term 7:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
ABIO 366 – Biological Chemistry II	3		3	3			ABIO 365
Upper Division Chem or Bio Laboratory	2		2				
Upper Division Lecture to go with Chem/Bio Lab	3		3				
Upper Division Free Elective	3						
Free Elective	3						
Term credit totals:	14		8	3			

Term 8:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
ACHM 351 – Physical Chemistry II or ACHM 445 – Biophysical Chemistry II	3		3	3			ACHM 350 or ACHM 444
Upper Division Free Elective	3						
Upper Division Free Elective	3						
Upper Division Free Elective	3						
Free Elective	3						
Term credit totals:	15		3	3			

Program Totals (in credits):	Total Credits: 120	SUNY GER: 54	LAS: 87	Major: 66	Elective & Other: 33	Upper Division: 46	Upper Division Major: 24	Number of SUNY GER Categories: 9

KEY Cr: credits **GER:** SUNY General Education Requirement (Enter Category Abbreviation) **LAS:** Liberal Arts & Sciences (Enter credits) **Maj:** Major requirement (Enter credits) **TPath:** SUNY Transfer Path Courses (Enter credits) **New:** new course (Enter X) **Co/Prerequisite(s):** list co/prerequisite(s) for the noted courses **Upper Division:** Courses intended primarily for juniors and seniors **SUNY GER Category Abbreviations:** American History (AH), Basic Communication (BC), Foreign Language (FL), Humanities (H), Math (M), Natural Sciences (NS), Other World Civilizations (OW), Social Science (SS), The Arts (AR), Western Civilization (WC)

SUNY Undergraduate Program Schedule (***OPTION: You can paste an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award: Interdisciplinary BS with a Concentration in Environmental Science and a Geography Specialization

d) Indicate **academic calendar type**: [X] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):

e) **Label each term in sequence**, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)

f) **Name of SUNY Transfer Path, if one exists:** Environmental Science - Biophysical **See Transfer Path Requirement Summary for details**

g) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed. **Complete all columns that apply to a course.**

Term 1:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AMAT 111 – Algebra & Calculus II or AMAT 112 – Calculus I or TMAT 118 – Honors Calculus Honors College	4	MS	4	4	X	118 New	
ACHM 115 – General Chemistry I and Lab or ACHM 120 – General Chemistry I AND ACHM 124 – General Chemistry I Lab	4	NS	4	4	X	115 New	
ABIO 130 – General Biology: Molecular and Cell Biology and Genetics	3	NS	3	3	X	X	
UUNI 110 – Writing & Critical Inquiry	3	COM	3				
General Education: Arts	3	AR					
Term credit totals:	17	17	14	11			

Term 2:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 105 – Introduction to Environmental Science	3	NS	3	3	X	X	Co – AENV 106
AENV 106 – Introduction to Environmental Science Laboratory	1		1	1	X	X	Co – AENV 105
ABIO 131 – General Biology: Ecology, Evolution, and Physiology	3	NS	3	3	X	X	ABIO 130
General Education: American History	3	AH	3				
ACHM 116 – General Chemistry II & Lab or ACHM 121 – General Chemistry II AND ACHM 125 – General Chemistry II Lab	4	NS	4	4	X		
General Education: Humanities	3	HU	3				
Term credit totals:	17	16	17	11			

Term 3:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
APHY 140 – Physics I: Mechanics or TPHY 141 – Honors Physics I: Mechanics	3	NS	3	3	X		
AATM 210 – Atmospheric Structure, Thermodynamics, and Circulation	3		3	3		X	Pre – AATM 111 Co or Pre – APHY 140
AENV 221 – Understanding the Earth	3		3	3		X	ACHM 115 or 120
General Education: Diversity, Equity, Inclusion, & Social Justice	3	DV	3				
General Education: World Language	3	WL	3				

Term 4:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 315 – Environmental Statistics and Computation	4		4	4		X	AATM 210, AMAT 111 or 112,
General Education: International Perspectives	3	OW	3				
ABIO 212Y – Introductory Genetics	4		4	4		X	ABIO 130, 131 – However Environmental Science students are exempt from this prereq. The Biology Department is ok with this.
ABIO 202 – Introduction to Biological Investigations II	1		1	1	X	X	ABIO 131 & ACHM 120, 121, 124, 125
AGOG/AUSP 220 – Introduction to Urban Geography	3	SS	3	3		X	

ABIO 201 – Introduction to Biological Investigations I	1		1	1	X	X	ABIO 130 & ACHM 120, 121, 124, 125									
Term credit totals:	16	9	16	10				Term credit totals:	15	6	15	12				
Term 5:	See KEY.							**Term 6:**	See KEY.							
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	
AENV 302 – Ocean Science	3		3	3		X	AATM 210, ACHM 120 or 130, AMAT 111 or 112, APHY 140	AENV 327 – Meteorological and Environmental Measurements	3		3	3		X		
ABIO 330 – Principles of Ecology and Evolution	3		3	3		X	ABIO 212Y	Upper Division Geography Selective (1 of 4)	3			3				
AGOG 290 – Introduction to Cartography	4		4	4				Upper Division Geography Selective (2 of 4)	3			3				
Free Elective	3							Free Elective	3							
								Free Elective	3							
Term credit totals:	14		10	10				Term credit totals:	15		3	9				
Term 7:	See KEY.							**Term 8:**	See KEY.							
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	
AGOG 496 – Geographic Information Systems	3		3	3		X		Upper Division Geography Selective (4 of 4)	3			3				
Upper Division Geography Selective (3 of 4)	3			3				AENV 490 – Major Topics in Environmental Studies	3			3		X	AATM 210, AENV 315	
Upper Division Free Elective	3							Upper Division Free Elective	3							
Free Elective	3							Upper Division Free Elective	3							
Free Elective	3															
Term credit totals:	15		3	6				Term credit totals:	13		0	6				

Program Totals (in credits):	**Total Credits: 121**	**SUNY GER: 53**	**LAS: 78**	**Major: 75**	**Elective & Other: 24**	**Upper Division: 47**	**Upper Division Major: 35**	**Number of SUNY GER Categories: 9**

KEY Cr: credits **GER:** SUNY General Education Requirement (Enter Category Abbreviation) **LAS:** Liberal Arts & Sciences (Enter credits) **Maj:** Major requirement (Enter credits) **TPath:** SUNY Transfer Path Courses (Enter credits) **New:** new course (Enter X) **Co/Prerequisite(s):** list co/prerequisite(s) for the noted courses **Upper Division:** Courses intended primarily for juniors and seniors **SUNY GER Category Abbreviations:** American History (AH), Basic Communication (BC), Foreign Language (FL), Humanities (H), Math (M), Natural Sciences (NS), Other World Civilizations (OW), Social Science (SS), The Arts (AR), Western Civilization (WC)

SUNY Undergraduate Program Schedule (***OPTION: You can paste an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award: Interdisciplinary BS with a Concentration in Environmental Science and a Ecosystem Specialization

h) Indicate **academic calendar type**: [X] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):

i) **Label each term in sequence**, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)

j) **Name of SUNY Transfer Path, if one exists:** Environmental Science - Biophysical **See Transfer Path Requirement Summary for details**

k) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed. **Complete all columns that apply to a course.**

Term 1:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AMAT 111 – Algebra & Calculus II or AMAT 112 – Calculus I or TMAT 118 – Honors Calculus Honors College	4	MS	4	4	X	118 New	
ACHM 115 – General Chemistry I and Lab or ACHM 120 – General Chemistry I AND ACHM 124 – General Chemistry I Lab	4	NS	4	4	X	115 New	
ABIO 130 – General Biology: Molecular and Cell Biology and Genetics	3	NS	3	3	X	X	
UUNI 110 – Writing & Critical Inquiry	3	COM	3				
General Education: Arts	3	AR					
Term credit totals:	17	17	14	11			

Term 2:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 105 – Introduction to Environmental Science	3	NS	3	3	X	X	Co – AENV 106
AENV 106 – Introduction to Environmental Science Laboratory	1		1	1	X	X	Co – AENV 105
ABIO 131 – General Biology: Ecology, Evolution, and Physiology	3	NS	3	3	X	X	ABIO 130
General Education: American History	3	AH	3				
ACHM 116 – General Chemistry II & Lab or ACHM 121 – General Chemistry II AND ACHM 125 – General Chemistry II Lab	4	NS	4	4	X		
General Education: Diversity; Equity, Inclusion, & Social Justice	3	DV	3				
Term credit totals:	17	16	17	11			

Term 3:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
APHY 140 – Physics I: Mechanics or TPHY 141 – Honors Physics I: Mechanics	3	NS	3	3	X		
AATM 210 – Atmospheric Structure, Thermodynamics, and Circulation	3		3	3		X	Pre – AATM 111 Co or Pre – APHY 140
AENV 221 – Understanding the Earth	3		3	3		X	ACHM 115 or 120
General Education: Humanities	3	HU	3				
General Education: World Language	3	WL	3				

Term 4:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 315 – Environmental Statistics and Computation	4		4	4		X	AATM 210, AMAT 111 or 112,
General Education: International Perspectives	3	OW	3				
ABIO 212Y – Introductory Genetics	4		4	4		X	ABIO 130, 131
ABIO 202 – Introduction to Biological Investigations II	1		1	1	X	X	ABIO 131 & ACHM 120, 121, 124, 125
General Education: Social Sciences	3	SS	3				

ABIO 201 – Introduction to Biological Investigations I	1		1	1	X	X	ABIO 130 & ACHM 120, 121, 124, 125									
Term credit totals:	16	9	16	10				Term credit totals:	15	6	15	9				
Term 5:	See KEY.							**Term 6:**	See KEY.							
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	
AENV 302 – Ocean Science	3		3	3		X	AATM 210, ACHM 120 or 130, AMAT 111 or 112, APHY 140	AENV 327 – Meteorological and Environmental Measurements	3		3	3		X		
ABIO 330 – Principles of Ecology and Evolution	3		3	3		X	ABIO 212Y	Upper Division Ecosystems Selective (1 of 4)	3			3				
Upper Division Free Elective	3							Upper Division Ecosystems Selective (2 of 4)	3			3				
Free Elective	3							Free Elective	3							
Free Elective	3							Free Elective	3							
Term credit totals:	15		6	6				Term credit totals:	15		3	9				
Term 7:	See KEY.							**Term 8:**	See KEY.							
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	
Free Elective	3							Upper Division Ecosystems Selective (4 of 4)	3			3				
Upper Division Ecosystems Selective (3 of 4)	3			3				AENV 490 – Major Topics in Environmental Studies	3			3		X	AATM 210, AENV 315	
ABIO 401 – Ecology	3		3	3				Upper Division Free Elective	3							
Free Elective	3							Upper Division Free Elective	3							
Free Elective	3															
Term credit totals:	15		3	6				Term credit totals:	12			6				

Program Totals (in credits):	**Total Credits: 122**	**SUNY GER: 50**	**LAS: 76**	**Major: 69**	**Elective & Other: 27**	**Upper Division: 46**	**Upper Division Major: 34**	**Number of SUNY GER Categories: 9**

SUNY Undergraduate Program Schedule (***OPTION: You can paste an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award: Interdisciplinary BS with a Concentration in Environmental Science and a Climate Change Specialization

l) Indicate **academic calendar type**: [X] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):

m) Label each term in sequence, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)

n) Name of SUNY Transfer Path, if one exists: Environmental Science - Biophysical **See Transfer Path Requirement Summary for details**

o) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed. **Complete all columns that apply to a course.**

Term 1:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AMAT 111 – Algebra & Calculus II or AMAT 112 – Calculus I or TMAT 118 – Honors Calculus Honors College	4	MS	4	4	X	118 New	
ACHM 115 – General Chemistry I and Lab or ACHM 120 – General Chemistry I AND ACHM 124 – General Chemistry I Lab	4	NS	4	4	X	115 New	
ABIO 130 – General Biology: Molecular and Cell Biology and Genetics	3	NS	3	3	X	X	
UUNI 110 – Writing & Critical Inquiry	3	COM	3				
General Education: Arts	3	AR					
Term credit totals:	17	17	14	11			

Term 2:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 105 – Introduction to Environmental Science	3	NS	3	3	X	X	Co – AENV 106
AENV 106 – Introduction to Environmental Science Laboratory	1		1	1	X	X	Co – AENV 105
ABIO 131 – General Biology: Ecology, Evolution, and Physiology	3	NS	3	3	X	X	ABIO 130
General Education: American History	3	AH	3				
ACHM 116 – General Chemistry II & Lab or ACHM 121 – General Chemistry II AND ACHM 125 – General Chemistry II Lab	4	NS	4	4	X		
General Education: Diversity; Equity, Inclusion, and Social Justice	3	DV	3				
Term credit totals:	17	16	17	11			

Term 3:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
APHY 140 – Physics I: Mechanics or TPHY 141 – Honors Physics I: Mechanics	3	NS	3	3	X		
AATM 210 – Atmospheric Structure, Thermodynamics, and Circulation	3		3	3		X	Pre – AATM 111 Co or Pre – APHY 140
General Education: Social Sciences	3	SS	3				
General Education: Humanities	3	HU	3				

Term 4:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 315 – Environmental Statistics and Computation	4		4	4		X	AATM 210, AMAT 111 or 112,
General Education: International Perspectives	3	OW	3				
ABIO 212Y – Introductory Genetics	4		4	4		X	ABIO 130, 131 – However Environmental Science students are exempt from this prereq. The Biology Department is ok with this.
ABIO 202 – Introduction to Biological Investigations II	1		1	1	X	X	ABIO 131 & ACHM 120, 121, 124, 125

General Education: World Language	3	WL	3					AATM 306 – Climate Variability and Change	3		3	3		X	Pre- AATM 210, AMAT 111 or 112 Co- AATM 315
ABIO 201 – Introduction to Biological Investigations I	1		1	1	X	X	ABIO 130 & ACHM 120, 121, 124, 125								
Term credit totals:	16	12	16	7				Term credit totals:	15	3	15	12			
Term 5:	See KEY.							**Term 6:**	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 302 – Ocean Science	3		3	3		X	AATM 210, ACHM 120 or 130, AMAT 111 or 112, APHY 140	AENV 327 – Meteorological and Environmental Measurements	3		3	3		X	
ABIO 330 – Principles of Ecology and Evolution	3		3	3		X	ABIO 212Y	Upper Division Climate Change Selective (1 of 3)	3			3			
AATM 405 – Water and Climate Change	3		3	3		X	AMAT 111 or 112, AATM 210	Upper Division Climate Change Selective (2 of 3)	3			3			
AENV 221 – Understanding the Earth	3		3	3		X	ACHM 115 or 120	Free Elective	3						
Free Elective	3							AENV 415 – Climate Laboratory	3		3	3			AATM 210, AENV 315, AMAT 111 or 112
	15		12	12				Term credit totals:	15		6	12			
Term 7:	See KEY.							**Term 8:**	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
Free Elective	3							Upper Division Climate Change Selective (3 of 3)	3			3			
AENV 450 – Paleoclimatology	3		3	3			ACHM 120 or 130	AENV 490 – Major Topics in Environmental Studies	3			3		X	AATM 210, AENV 315
Upper Division Free Elective	3							Upper Division Free Elective	3						
Free Elective	3							Upper Division Free Elective	3						
Free Elective	3														
Term credit totals:	15		3	3				Term credit totals:	12		0	6			

Program Totals (in credits):	**Total Credits: 122**	**SUNY GER: 50**	**LAS: 83**	**Major: 74**	**Elective & Other: 21**	**Upper Division: 48**	**Upper Division Major: 39**	**Number of SUNY GER Categories: 9**

KEY Cr: credits **GER:** SUNY General Education Requirement (Enter Category Abbreviation) **LAS:** Liberal Arts & Sciences (Enter credits) **Maj:** Major requirement (Enter credits) **TPath:** SUNY Transfer Path Courses (Enter credits) **New:** new course (Enter X) **Co/Prerequisite(s):** list co/prerequisite(s) for the noted courses **Upper Division:** Courses intended primarily for juniors and seniors **SUNY GER Category Abbreviations:** American History (AH), Basic Communication (BC), Foreign Language (FL), Humanities (H), Math (M), Natural Sciences (NS), Other World Civilizations (OW), Social Science (SS), The Arts (AR), Western Civilization (WC)

SUNY Undergraduate Program Schedule (***OPTION: You can paste an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award: Interdisciplinary BS with a Concentration in Environmental Science and a Sustainability Science & Policy Specialization

p) Indicate **academic calendar type**: [X] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):

q) **Label each term in sequence**, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)

r) **Name of SUNY Transfer Path, if one exists:** Environmental Science - Biophysical **See Transfer Path Requirement Summary for details**

s) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed. **Complete all columns that apply to a course.**

Term 1:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AMAT 111 – Algebra & Calculus II or AMAT 112 – Calculus I or TMAT 118 – Honors Calculus Honors College	4	MS	4	4	X	118 New	
ACHM 115 – General Chemistry I and Lab or ACHM 120 – General Chemistry I AND ACHM 124 – General Chemistry I Lab	4	NS	4	4	X	115 New	
ABIO 130 – General Biology: Molecular and Cell Biology and Genetics	3	NS	3	3	X	X	
UUNI 110 – Writing & Critical Inquiry	3	COM	3				
General Education: Arts	3	AR					
Term credit totals:	17	17	14	11			

Term 2:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 105 – Introduction to Environmental Science	3	NS	3	3	X	X	Co – AENV 106
AENV 106 – Introduction to Environmental Science Laboratory	1		1	1	X	X	Co – AENV 105
ABIO 131 – General Biology: Ecology, Evolution, and Physiology	3	NS	3	3	X	X	ABIO 130
General Education: American History	3	AH	3				
ACHM 116 – General Chemistry II & Lab or ACHM 121 – General Chemistry II AND ACHM 125 – General Chemistry II Lab	4	NS	4	4	X		
General Education: Diversity; Equity, Inclusion, Social Justice	3	DV	3				
Term credit totals:	17	16	17	11			

Term 3:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
APHY 140 – Physics I: Mechanics or TPHY 141 – Honors Physics I: Mechanics	3	NS	3	3	X		
AATM 210 – Atmospheric Structure, Thermodynamics, and Circulation	3		3	3		X	Pre – AATM 111 Co or Pre – APHY 140
General Education: Social Sciences	3	SS	3				
General Education: Humanities	3	HU	3				

Term 4:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 315 – Environmental Statistics and Computation	4		4	4		X	AATM 210, AMAT 111 or 112,
General Education: International Perspectives	3	OW	3				
ABIO 212Y – Introductory Genetics	4		4	4		X	ABIO 130, 131 – However Environmental Science students are exempt from this prereq. The Biology Department is ok with this.
ABIO 202 – Introduction to Biological Investigations II	1		1	1	X	X	ABIO 131 & ACHM 120, 121, 124, 125

General Education: World Language	3	WL	3					AENV 250 – Sustainable Development: Energy and Resources	3		3	3		X	ACHM 120 or 130, AMAT 111 or 112, APHY 140
ABIO 201 – Introduction to Biological Investigations I	1		1	1	X	X	ABIO 130 & ACHM 120, 121, 124, 125								
Term credit totals:	16	12	16	7				Term credit totals:	15	3	15	12			
Term 5:	See KEY.							**Term 6:**	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
AENV 302 – Ocean Science	3		3	3		X	AATM 210, ACHM 120 or 130, AMAT 111 or 112, APHY 140	AENV 327 – Meteorological and Environmental Measurements	3		3	3		X	
ABIO 330 – Principles of Ecology and Evolution	3		3	3		X	ABIO 212Y	Upper Division Sustainability Science & Policy Selective (1 of 4)	3			3			
Free Elective	3							Upper Division Sustainability Science & Policy Selective (2 of 4)	3			3			
AENV 221 – Understanding the Earth	3		3	3		X	ACHM 115 or 120	Free Elective	3						
AATM 304 – Air Quality and Air Pollution Policy	3		3	3		X	AATM 210, AMAT 111 or 112, PHY 140	Free Elective	3						
Term credit totals:	15		12	12				Term credit totals:	15		3	9			
Term 7:	See KEY.							**Term 8:**	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
RPOS 399 – Selected Topics	3		3	3		X	Permission from Instructor	Upper Division Sustainability Science & Policy Selective (4 of 4)	3			3			
Upper Division Sustainability Science & Policy Selective (3 of 4)	3		3	3				AENV 490 – Major Topics in Environmental Studies	3			3		X	AATM 210, AENV 315
Upper Division Free Elective	3							Upper Division Free Elective	3						
Free Elective	3							Upper Division Free Elective	3						
Free Elective	3														
Term credit totals:	15		6	6				Term credit totals:	12		0	6			

Program Totals (in credits):	**Total Credits: 122**	**SUNY GER: 50**	**LAS: 86**	**Major: 77**	**Elective & Other: 21**	**Upper Division: 48**	**Upper Division Major: 36**	**Number of SUNY GER Categories: 9**

KEY Cr: credits **GER:** SUNY General Education Requirement (Enter Category Abbreviation) **LAS:** Liberal Arts & Sciences (Enter credits) **Maj:** Major requirement (Enter credits) **TPath:** SUNY Transfer Path Courses (Enter credits) **New:** new course (Enter X) **Co/Prerequisite(s):** list co/prerequisite(s) for the noted courses **Upper Division:** Courses intended primarily for juniors and seniors **SUNY GER Category Abbreviations:** American History (AH), Basic Communication (BC), Foreign Language (FL), Humanities (H), Math (M), Natural Sciences (NS), Other World Civilizations (OW), Social Science (SS), The Arts (AR), Western Civilization (WC)

SUNY Undergraduate Program Schedule (***OPTION: You can paste an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award:_____Interdisciplinary BS with a Concentration in Financial Market Regulation__

t) Indicate **academic calendar type**: [X] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):

u) Label each term in sequence, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)

v) Name of SUNY Transfer Path, if one exists: _____ See Transfer Path Requirement Summary for details

w) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed. **Complete all columns that apply to a course.**

Term 1:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
CINF 108 – Programing for Problem Solving	3			3		X	
UUNI 110 – Writing and Critical Inquiry	3	COM	3				
General Education: American History	3	AH	3				
General Education: Arts	3	AR					
Free Elective	3						
Term credit totals:	15	9	6	3			

Term 2:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
BFIN 236 – Crisis and Regulation Financial Markets	3			3			
AMAT 108 – Elementary Statistics	3	MS	3				
General Education: International Perspective	3	OW	3				
General Education: World Language	3	WL	3				
Free Elective	3						
Term credit totals:	15	9	9	3			

Term 3:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
BACC 211 Financial Accounting	3		3	3			
BITM 215 – Information Technologies for Business	3			3		X	
General Education: Natural Science	3	NS	3				
General Education: Humanities	3	HU	3				
General Education: Social Sciences	3	SS	3				
Term credit totals:	15	9	12	6			

Term 4:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
BFIN 300 – Financial Management	3			3			BACC 211
General Education: Diversity; Equity, Inclusion, & Social Justice	3	DV	3				
BACC 313 Financial Statement Analysis	3			3			
LAS Elective	3		3				
Free Elective	3						
Term credit totals:	15	3	9	3			

Term 5:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
BFIN 301 – Corporate Financial Policy and Strategy	3			3		X	
BFIN 375 – Money and Capital Markets	3			3			
Upper Division LAS Elective	3		3				
LAS Elective	3		3				
Free Elective	3						
Term credit totals:	15		6	6			

Term 6:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
BFIN 333 – Investment Management	3			3			
Upper Division LAS Elective	3		3				
LAS Elective	3		3				
Upper Division Free Elective	3						
Free Elective	3						
Term credit totals:	15		6	3			

Term 7:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**

Term 8:	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**

BITM 330 Improving Business Performances with Information Technology	3			3			AMAT 108		LAS Elective	3		3				
BFIN/RPAD 435 – Law in Financial Market Regulation	3			3					BFIN 439 – Technology in Financial Market Regulation	3			3			
Upper Division LAS Elective	3		3						Upper Division LAS Elective	3		3				
LAS Elective	3		3						LAS Elective	3		3				
Upper Division Free Elective	3								Upper Division Free Elective	3						
Term credit totals:	15		6	6					Term credit totals:	15		6	6			

Program Totals (in credits):	Total Credits: 120-121	SUNY GER: 30	LAS: 60	Major: 39-40	Elective & Other: 51	Upper Division: 45	Upper Division Major: 24	Number of SUNY GER Categories: 9

KEY Cr: credits **GER:** SUNY General Education Requirement (Enter Category Abbreviation) **LAS:** Liberal Arts & Sciences (Enter credits) **Maj:** Major requirement (Enter credits) **TPath:** SUNY Transfer Path Courses (Enter credits) **New:** new course (Enter X) **Co/Prerequisite(s):** list co/prerequisite(s) for the noted courses **Upper Division:** Courses intended primarily for juniors and seniors **SUNY GER Category Abbreviations:** American History (AH), Basic Communication (BC), Foreign Language (FL), Humanities (H), Math (M), Natural Sciences (NS), Other World Civilizations (OW), Social Science (SS), The Arts (AR), Western Civilization (WC)

SUNY Graduate Program Schedule ***OPTION:*** ***You can insert an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award:_____

a) Indicate **academic calendar** type: [ ] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):

b) **Label each term in sequence**, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)

c) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed.

d) Complete the last row to show program totals and comprehensive, culminating elements. **Complete all columns that apply to a course.**

Term 1:				**Term 2:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites**
Term credit total:				Term credit total:			
Term 3:				**Term 4:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites**
Term credit total:				Term credit total:			
Term 5:				**Term 6:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites**
Term credit total:				Term credit total:			
Term 7:				**Term 8:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites)**
Term credit total:				Term credit total:			

Program Total:	**Total Credits:**	**Identify the required comprehensive, culminating element(s), such as a thesis or examination, including course number(s), if applicable:**

New: X if new course **Prerequisite(s)**: list prerequisite(s) for the listed courses

Section 4. SUNY Faculty Table

a) If applicable, provide information on faculty members who will be teaching new or significantly revised courses in the program. Expand the table as needed.

b) **Append** at the end of this document position descriptions or announcements for each to-be-hired faculty member

(a) Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	(b) % of Time Dedicated to This Program	(c) Program Courses Which May Be Taught (Number and Title)	(d) Highest and Other Applicable Earned Degrees (include College or University)	(e) Discipline(s) of Highest and Other Applicable Earned Degrees	(f) Additional Qualifications: List related certifications and licenses and professional experience in field.
PART 1. Full-Time Faculty					
Concentration in Biochemistry and Molecular Biology Faculty:					
Forni, Paolo – Associate Professor	50%	ABIO 303 Developmental Biology	Ph.D. University of Turin	Biochemistry & Cellular Biotechnology	
Henck, Colin – Instructional Support Specialist	100%	ACHM 124 General Chemistry Laboratory I, ACHM 125 General Chemistry Laboratory II ACHM 222 Organic Chemistry Laboratory I ACHM 223 Organic Chemistry Laboratory II, ACHM 448 Advanced Forensic Chemistry Laboratory	M.S. University at Albany	Biochemistry	
Li, Pan – Associate Professor	50%	ABIO 366 Biological Chemistry II	Ph.D. SUNY Buffalo	Biology	
Lnenicka, Gregory - Professor	50%	ABIO 342 Neurophysiology Laboratory	Ph.D. University of Virginia	Biology	
Mayerhofer, Linda - Lecturer	66%	ABIO 335 Immunology	Ph.D. School of Public Health	Biochemistry and Molecular Biology and Genetics	
Orokos, Donald – Instructional Support Specialist	100%	ABIO 302 Cell Biology Laboratory, ABIO 336	Ph.D. University at Albany	Cellular and Molecular Biology	

(a) Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	(b) % of Time Dedicated to This Program	(c) Program Courses Which May Be Taught (Number and Title)	(d) Highest and Other Applicable Earned Degrees (include College or University)	(e) Discipline(s) of Highest and Other Applicable Earned Degrees	(f) Additional Qualifications: List related certifications and licenses and professional experience in field.
		Immunology Laboratory			
Osuna, Robert – Associate Professor, Biochemistry and Molecular Biology Program Director	100%	ABIO 212Y Genetics, ABIO 367 Biochemistry Laboratory, ABIO 399/499 Supervised Research for Juniors and Seniors	Ph.D. University of Michigan	Biophysics	
Scimemi, Annalisa – Associate Professor	50%	ABIO 341 Neurobiology	Ph.D. International School for Advanced Studies	Molecular and Cell Biology	
Shekhtman, Alexander – Professor and Chair	66%	ACHM 425 Undergraduate Research in Chemistry	Ph.D. University at Albany	Biochemistry	
Sheng, Jia – Associate Professor	50%	ACHM 221 Organic Chemistry II	Ph.D. Georgia State University	Bio-organic Chemistry	
Shi, Hua – Associate Professor	50%	ABIO 365 Biological Chemistry I	Ph.D. Cornell University	Pathobiology	
Concentration in Environmental Sciences Faculty:					
Aiguo Dai – Distinguished Professor	50%	A ATM 301 Surface Hydrology and Hydrometeorology, A ATM 405 Water and Climate Change,	PhD, Columbia University	Atmospheric Science	
Oliver Elison Timm – Associate Professor	50%	A ATM/A ENV 315 Environmental Statistics and Computation	PhD, University Kiel	Meteorology	
Robert Fovell – Professor	25%	A ATM 210 Atmospheric Structure, Thermodynamics, and Circulation	PhD, University of Illinois	Atmospheric Sciences	
Aubrey Hillman – Assistant Professor	100%	A ENV 221 Understanding the Earth, A ATM / A ENV 327 Meteorological and	PhD, University of Pittsburgh	Geology	

(a) Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	(b) % of Time Dedicated to This Program	(c) Program Courses Which May Be Taught (Number and Title)	(d) Highest and Other Applicable Earned Degrees (include College or University)	(e) Discipline(s) of Highest and Other Applicable Earned Degrees	(f) Additional Qualifications: List related certifications and licenses and professional experience in field.
		Environmental Measurement			
Jiping Liu – Associate Professor	50%	A ATM 306 Climate Variability and Change, A ENV 302 Ocean Sciences	PhD, Columbia University	Atmospheric Science/Physical Oceanography	
Justin R. Minder – Associate Professor & Program Director	25%	ATM 210 Atmospheric Structure, Thermodynamics, and Circulation, A ATM 301 Surface Hydrology and Hydrometeorology, A ENV 404 The Adirondack Environment	PhD, University of Washington	Atmospheric Sciences	
Sujata Murty – Assistant Professor	100%	ENV 250 Sustainable Development: Energy and Resources, A ENV 302 Ocean Sciences, A ENV 450 Paleoclimatology	PhD, Nanyang Technological University	Oceanography	
Brian E.J. Rose – Associate Professor	50%	A ENV 415 / A ATM 415 Climate Laboratory	PhD, Massachusetts Institute of Technology	Climate Physics and Chemistry	
Brian Tang – Associate Professor	50%	A ATM 413 Weather, Climate Change, and Societal Impacts	PhD, Massachusetts Institute of Technology	Atmospheric Science	
Christopher D. Thorncroft – Professor	25%	A ATM 306 Climate Variability and Change	PhD, University of Reading	Meteorology	
Mathias Vuille – Professor	75%	A ENV 450 Paleoclimatology, A ENV 490 Major Topics in Environmental	PhD, University of Bern	Geography	

(a) Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	(b) % of Time Dedicated to This Program	(c) Program Courses Which May Be Taught (Number and Title)	(d) Highest and Other Applicable Earned Degrees (include College or University)	(e) Discipline(s) of Highest and Other Applicable Earned Degrees	(f) Additional Qualifications: List related certifications and licenses and professional experience in field.
		Science, A ENV 496 Environmental Internships			
Liming Zhou – Professor	25%	A ATM 335 Meteorological Remote Sensing	PhD, Boston University	Geography	
Paul Roundy – Professor	25%	A ATM/A ENV 315 Environmental Statistics and Computation	PhD, Pennsylvania State University	Meteorology	
Tassiana Moura de Oliveria, Lecturer	20%	AGOG/ALCS 354 Environment and Development	Ph.D. Universidade Federal de Pernambuco	Political Science	
Concentration in Financial Market Regulation Faculty:					
Guy D. Fernando, Associate Professor for Accounting and Law	50%	BACC 211 – Financial Accounting	Ph.D., Syracuse University	Accounting	
Mark E. Hughes, Lecturer and Director of Accounting Programs	50%	BACC 461 – Auditing	Ph.D., University at Albany	Informatics	Certified Public Accountant (CPA) MS in Taxation from University at Albany BS in Accounting from the University at Albany Experience as a Tax Accountant and a General Manager for a local not-for-profit arts organization.
Aaron K, Brauner, Assistant Professor of Finance	50%	BFIN 439 – Technology in Financial Market Regulation	Ph.D., University of Florida	Finance	
Thomas Monaco, Lecturer in Finance	100%	BFIN 300 – Financial Management	MBA, Fordham University	Business Administration	President, Small Enterprise Assistance Fund, Washington, DC Chief Information Officer, Pearl Street Advisors, Hong Kong, China

(a)	(b)	(c)	(d)	(e)	(f)
Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	**% of Time Dedicated to This Program**	**Program Courses Which May Be Taught (Number and Title)**	**Highest and Other Applicable Earned Degrees (include College or University)**	**Discipline(s) of Highest and Other Applicable Earned Degrees**	**Additional Qualifications: List related certifications and licenses and professional experience in field.**
Hany Shawky, Professor of Finance	50%	BFIN 333 – Investment Analysis and Portfolio Management	Ph.D., Ohio State University	Finance	
Rita Biswas, Associate Professor of Finance	50%	BFIN 375 – Money and Capital Markets	Ph.D., Texas A&M University	International Finance and Banking	MS in International Economics from University of Rochester
Prinkle Sharma, Assistant Professor for Information Security and Digital Forensics	25%	BFOR 100 – Introduction to Information Systems	Ph.D., University of Massachusetts Dartmouth	Computer Engineering	
Ethan Sprissler, Lecturer	25%	BITM 215 – Information Technology for Business	Ph.D., University at Albany	Information Science	
Indushobha N. Chengalur-Smith, Professor of Information Systems and Business Analytics	25%	BITM 331 - Business Systems Analysis and Design	Ph.D., Virginia Tech	Statistics	
Pranay Jinna, Assistant Professor	25%	BITM 416 - Topics in Business Analytics	Ph.D., Emory University	Information Systems	
Lenore Horowitz, Lecturer	25%	CINF 108 - Programming and Problem Solving	Ph.D., University at Albany	Information Science	MS in Computer Engineering from University of Massachusetts at Lowell Manager and Senior Software Engineer at Raytheon Company from 1979 – 1990.
Vladimir Kuperman, Professor of Practice	25%	ICSI 201 – Introduction to Computer Science	Ph.D., Moscow Mendeleyev University of Chemical Technology	Computer Science	Doctor of Science in Economics from Supreme Attestation Committee of Ministry of Education of Russia
Part 2. Part-Time Faculty					
Concentration in Biochemistry and Molecular Biology Part-Time Faculty:					
Cartier, Caroline Girard - Lecturer	100%	ABIO 344 Mammalian Anatomy Laboratory	Ph.D. University at Albany	Ecology & Evolutionary Biology	
Concentration in Environmental Sciences Part-Time Faculty:					

(a)	(b)	(c)	(d)	(e)	(f)
Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	**% of Time Dedicated to This Program**	**Program Courses Which May Be Taught (Number and Title)**	**Highest and Other Applicable Earned Degrees (include College or University)**	**Discipline(s) of Highest and Other Applicable Earned Degrees**	**Additional Qualifications: List related certifications and licenses and professional experience in field.**
William Roberts, Adjunct Professor	100%	A ENV 105 Introduction to Environmental Science, A ENV 106 Introduction to Environmental Science Laboratory, A ENV 221 Understanding the Earth, ATM 304 Air Quality and Air Pollution Policy	Ph.D., College of William and Mary M.S., Easter Michigan University	Educational Planning, Policy and Leadership (Ph.D)., Ecology (M.S)	
Erin Potter, Adjunct Professor	100%	AENV 106 Introduction to Environmental Science Laboratory	MS, Mississippi State University MS, University at Albany	Geoscience Teaching Atmospheric Sciences & Meteorology	Adjunct at SUNY Oneonta and Binghamton University
Jeremy Kirchman, Affiliate Professor	100%	ABIO 402 Evolution	Ph.D., University of Florida	Zoology	Curator for Birds and Mamles at the New York State Museum
Concentration in Financial Market Regulation Part-Time Faculty:					
Paul Glotzbecker, Adjunct Professor	100%	BACC 313 Financial Statement Analysis	MS, University at Albany	Accounting	**Controller & Vice President** - Touhey Associates since January 2003. **Vice President of Finance** – Aqua Clear Industries from 1997 - 2001
Edward Lane, Adjunct Professor	100%	BFIN 301 – Corporate Financial Policy and Strategy	MBA, University of Albany	Finance	Certified Financial Planner BS in Economics from University of Pennsylvania

(a)	(b)	(c)	(d)	(e)	(f)
Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	**% of Time Dedicated to This Program**	**Program Courses Which May Be Taught (Number and Title)**	**Highest and Other Applicable Earned Degrees (include College or University)**	**Discipline(s) of Highest and Other Applicable Earned Degrees**	**Additional Qualifications: List related certifications and licenses and professional experience in field.**
Peter Bulger, Adjunct Professor	100%	BFIN/RPAD 435 – Law in Financial Market Regulation	MBA, Fordham University	Investment Finance	Principle at Trade Investment Group-TIA since January 2018 Consultant and Advisor at Drive Wealth September 2017 – April 2020 Executive Managing Director and Chief Operating Officer and Board of Directors for C.L. King & Associates from February 1992 to December 2015 Securities Industry Certified by the Financial Industry Regulatory Authority (FINRA)
Nim Dvir, Adjunct Instructor	100%	BITM 330 Improving Business Performance with Information Technologies	Ph.D., University at Albany	Information Studies	MBA in Marketing and Information Systems from Bruch College CUNY
Kimberleigh Phelan, Adjunct Instructor	100%	BFIN 236 – Crisis and Regulation in Financial Markets	MBA, University at Albany	Business Administration and Management	Senior Vice President at M&T Bank since 1999
Part 3. To-Be-Hired Faculty (List as TBH1, TBH2, etc., and provide expected hiring date instead of name.)					
TBH1 – expected hiring date in January 2023	100%	ABIO 315 Microbiology Lab			

2023 Bulletin Course Descriptions for Courses Recently Reviewed by SED:

***Order of courses matches layout on Registration Form.**

Biochemistry & Molecular Biology Concentration Course Descriptions:

A BIO 130 General Biology: Molecular and Cell Biology and Genetics (3)

– Syllabus Reviewed in Human Biology BS Revision, Approved January 2023

Formerly A BIO 121. First course in a two semester sequence which offers a comprehensive survey of the structures and functions common to all living systems at the molecular, cellular, organismal, and population levels. This course emphasizes molecular and cell biology, and genetics. May not be taken for credit by students who have credit for A BIO 111 or A BIO 121.

A BIO 131 General Biology: Ecology, Evolution, and Physiology (3)

– Syllabus Reviewed in Human Biology BS Revision, Approved January 2023

Formerly A BIO 120. Second course in a two semester sequence which offers a comprehensive survey of the structures and functions common to all living systems at the molecular, cellular, organismal, and population levels. This course emphasizes evolutionary principles, ecology, anatomy and physiology. May not be taken for credit by students who have credit for A BIO 110 or A BIO 120. Students must complete A BIO 131 with a *C*- or better to register for A BIO 212Y or A BIO 301. Prerequisite(s): A BIO 130 or A BIO 121.

A BIO 212Y Introductory Genetics (4)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Genetics from the classical Mendelian Laws of inheritance to molecular genetics. Topics will include: DNA structure and replication; Mendelian genetics and recombination; population, fungal, somatic cell, and bacterial genetics; gene organization; the genetic code; mechanisms of gene expression and regulation; and applications of genetic technology. Three class periods and one discussion section. Prerequisite(s): A BIO 130 or 121 and A BIO 131 or 120, with a grade of *C*- or better in A BIO 121 or A BIO 131. Students must complete A BIO 212Y with a *C* or better to register for A BIO 365.

A BIO 425 Molecular Biology (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Mechanisms of gene expression and regulation will be studied, using examples from bacteria and eukaryotes. Discussion will include experimental approaches to gene cloning and sequencing, analysis of DNA-protein interactions, and structure and function of RNA. Prerequisite(s): A BIO 212Y. Prerequisite(s) or corequisite(s): A BIO 365.

A BIO 426 Laboratory in Molecular Biology (2)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Experiments in the modern techniques of recombinant molecular biology will be performed. These may include restriction mapping of plasmids, gene cloning, DNA blotting, DNA sequence analysis, plasmid constructions, and gene expression studies. One laboratory per week, plus additional flexible time as required. Prerequisite(s): A BIO 201 and 202Z, A BIO 212Y. Prerequisite(s) or corequisite(s): A BIO 365 and 425. Course fee applies. Consult the Schedule of Classes.

A BIO 367 Biochemistry Laboratory (2)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

This laboratory course is designed to provide basic training in various procedures used in present day biochemical research. These will include methods for protein purification, enzyme kinetics, peptide sequencing, and fractionation of intracellular components. In addition, biochemical processes such as glucose metabolism and photosynthesis will be studied. One laboratory period each week. Prerequisite(s): A BIO 201 and 202Z. Prerequisite(s) or corequisite(s): A BIO 365 or equivalent and permission of instructor. Course fee applies. Consult the Schedule of Classes.

A CHM 115 General Chemistry I and Lab (4-5)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Atomic theory, quantitative relationships in chemical change, electronic structure of atoms and chemical periodicity, chemical bonding, and states of matter. This is a combined lecture and lab. The lab includes laboratory techniques and experiments demonstrating chemical principles. Experiments including stoichiometry, calibration curves, titrations, empirical formula, solubility and chemical synthesis. Course fee applies. Consult the Schedule of Classes.

A CHM 116 General Chemistry II and Lab (4)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Elementary principles of chemical equilibrium, thermodynamics, and kinetics; electrochemistry; descriptive chemistry of the elements and their compounds. This is a combined lecture and lab. The lab includes laboratory techniques and experiments demonstrating chemical principles. Experiments including solution properties, kinetics, equilibrium, spectroscopy and a final project. Prerequisite(s): A CHM 115 or A CHM 120 and 124. Course fee applies. Consult the Schedule of Classes.

T CHM 130 Advanced General Chemistry I (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Energy, enthalpy, thermochemistry, quantum mechanics and atomic theory, general concepts of bonding, covalent bonding and orbitals, gases, liquids, and solids. Students will be introduced to faculty research within the Department of Chemistry, as well as interdisciplinary areas. Honors College students only. Only one of A CHM 120 and T CHM 130 may be taken for credit.

T CHM 131 Advanced General Chemistry II (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Chemical kinetics, chemical equilibrium, spontaneity, entropy, free energy, electrochemistry, transition metals, coordination chemistry, organic and biochemical molecules. Honors College students only. Only one of A CHM 121 and T CHM 131 may be taken for credit. Prerequisite(s): A CHM 130 or T CHM 130.

A CHM 124 General Chemistry Laboratory I (1)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Introduction to laboratory techniques, experiments demonstrating chemical principles in General Chemistry I, including stoichiometry, calorimetry, and properties of some elements and compounds. Prerequisite(s) or corequisite(s): A CHM 120 or 130. Course fee applies. Consult the Schedule of Classes.

A CHM 125 General Chemistry Laboratory II (1)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Application of laboratory techniques, experiments demonstrating chemical principles of General Chemistry II, including solution properties, kinetics, equilibrium, and qualitative analysis of some anions

and cations. Prerequisite(s): A CHM 124. Prerequisite(s) or corequisite(s): A CHM 121 or 131. Course fee applies. Consult the Schedule of Classes.

A CHM 220 Organic Chemistry I (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Structure, synthesis, and reactions of the principal classes of organic compounds, stressing the underlying principles of reaction mechanisms and stereochemistry techniques. Prerequisite(s): A CHM 121 or 131 and 125.

A CHM 222 Organic Chemistry Laboratory I (1)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Basic techniques of organic chemistry including extraction, crystallization, distillation, and chromatography; physical properties of compounds. Prerequisite(s) or corequisite(s): A CHM 220. Course fee applies. Consult the Schedule of Classes.

A CHM 350 Physical Chemistry I (3)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Mathematical description of physicochemical systems and their interpretation in terms of thermodynamics, kinetic theory, reaction rates and statistical mechanics. Atomic and molecular structure from the viewpoint of quantum theory with special emphasis on bonding and spectra. This is the required physical chemistry course for B.S. Chemistry students with emphasis in Chemistry. Only one of A CHM 350 or A CHM 444 may be taken for credit toward the major for B.S. Chemistry with emphasis in Forensic Chemistry or Chemical Biology or B.A. Chemistry. Prerequisite(s): A CHM 221, A MAT 113 or 119, and A PHY 150. Prerequisite(s) or corequisite(s) A MAT 214.

A CHM 351 Physical Chemistry II (3)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

A continuation of A CHM 350. The course contains the principles of chemical kinetics, quantum theory and spectroscopy. Topics include the rate laws, systems displaying complex kinetics, enzyme catalysis, atomic structure, molecular structure, microwave, Raman, infrared and ultraviolet-visible spectroscopy and statistical mechanics. This is the required physical chemistry course for B.S. Chemistry students with emphasis in Chemistry. Only one of A CHM 351 or A CHM 445 may be taken for credit toward the major for B.S. Chemistry with emphasis in Forensic Chemistry or Chemical Biology or B.A. Chemistry. Prerequisite(s): A CHM 350.

A CHM 444 Biophysical Chemistry I (3)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Foundations of the physical principles and their applications to biochemical systems. Topics include first and second laws of thermodynamics, applications of these to chemical reactions and equilibria, and molecular motion and transport phenomena. Does not yield credit toward the major for B.S. Chemistry students with emphasis in Chemistry. Only one of A CHM 350 or A CHM 444 may be taken for credit toward the major for B.S. Chemistry with emphasis in Forensic Chemistry or Chemical Biology or B.A. Chemistry. Prerequisite(s): A CHM 221, A MAT 113 or 119, and A PHY 150.

A CHM 445 Biophysical Chemistry II (3)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Foundations of the physical principles and their applications to biochemical systems. Topics include transport phenomena and sedimentation and electrophoresis, chemical and biochemical kinetics,

chemical quantum mechanics and spectroscopy. Does not yield credit toward the major for B.S. Chemistry students with emphasis in Chemistry. Only one of A CHM 351 or A CHM 445 may be taken for credit toward the major for B.S. Chemistry with emphasis in Forensic Chemistry or Chemical Biology or B.A. Chemistry. Prerequisite(s): A CHM 444.

A PHY 140 Physics I: Mechanics (3)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

An introduction to the fundamentals of physics: Classical Mechanics. Topics include the concepts of force, energy and work applied to the kinematics and dynamics of particles and rigid bodies and an introduction to special relativity. Only one of A PHY 140 or T PHY 141 or A PHY 142 may be taken for credit. This course is generally offered in the fall semester; students taking this course in the fall semester are required to enroll in a discussion section associated with the lecture. Smaller, out of sequence sections of this course are offered in the spring and summer semester and do not require enrollment in a discussion section. Prerequisite(s) or corequisite(s): A MAT 111 or A MAT 112 or A MAT 118.

T PHY 141 Honors Physics I: Mechanics (3)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

Course content will follow A PHY 140. However, topics will be covered in more depth and at a somewhat more advanced level. T PHY 141 is the Honors College version of A PHY 142. Only one of A PHY 140 or T PHY 141 may be taken for credit. Prerequisite(s) or corequisite(s): A MAT 111 or A MAT 112 or A MAT 118. Open to Honors College students only.

A PHY 142 Physics I: Advanced Mechanics (3)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

An introduction to the fundamentals of physics, Classical Mechanics. Topics include the concepts of force, energy and work applied to the kinematics and dynamics of particles and rigid bodies. This course is designed for students who are interested in careers in physical science and engineering and who are well prepared to take a more advanced course in introductory physics. Course content expands on the content of A PHY 140 and T PHY 141. More advanced textbook is used. Students with a strong interest in physical sciences should consider taking A PHY 142 instead of A PHY 140 or T PHY 141. Only one of A PHY 140, T PHY 141, or A PHY 142 may be taken for credit. Prerequisite(s) or corequisite(s): A MAT 111 or A MAT 112.

A PHY 150 Physics II: Electromagnetism (3)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

An introduction to the fundamentals of physics: electrostatics and magnetism, including the concepts of the electric and magnetic fields, electric potential and basic circuits; the laws of Gauss, Ampere, and Faraday; Maxwell's equations; geometrical optics. This course is generally offered in the spring semester; students taking this course in the spring semester are required to enroll in a discussion section associated with the lecture. Smaller, out of sequence sections of this course are offered in the fall and summer semester and do not require enrollment in a discussion section. Prerequisite(s) or corequisite(s): A MAT 113 or A MAT 119; prerequisite(s): A PHY 140, or T PHY 141 or A PHY 142.

T PHY 151 Honors Physics II: Electromagnetism (4)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

An introduction to the fundamentals of physics: electrostatics and magnetism, including the concepts of the electric and magnetic fields, electric potential and basic circuits; the laws of Gauss, Ampere and

Faraday; Maxwell's equations; geometrical optics. Course content will follow A PHY 150. However, topics will be covered in more depth and at a more advanced level. Only one of A PHY 150, or T PHY 151 or A PHY 152 may be taken for credit. Prerequisite or corequisite(s): A MAT 113 or A MAT 119 or T MAT 119; prerequisite(s): A PHY 140, or T PHY 141 or A PHY 142. Open to Honors College students only.

A PHY 152 Physics II: Advanced Electromagnetism (3)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

An introduction to the fundamentals of physics: electrostatics and magnetism, including the concepts of the electric and magnetic fields, electric potential and basic circuits; the laws of Gauss, Ampere and Faraday; Maxwell's equations. This course is designed for students who are interested in careers in physical science and engineering and who are well prepared to take a more advanced course in introductory physics. Course content expands on the content of A PHY 150 and T PHY 151. More advanced textbook is used. Students with a strong interest in physical sciences should consider taking A PHY 152 instead of A PHY 150 or T PHY 151. Only one of A PHY 150, T PHY 151, or A PHY 152 may be taken for credit. Prerequisite or corequisite(s): A MAT 113 or A MAT 119 or T MAT 119; prerequisite(s): A PHY 140, or T PHY 141 or A PHY 142.

A MAT 112 Calculus I (4)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Calculus of one variable. Limits, continuity, differentiation of algebraic functions, applications of differentiation, anti-derivatives, the definite integral, transcendental functions. A MAT 118 is the honors version of A MAT 112 and substitutes for A MAT 112 toward the prerequisite in any course. Only one of A MAT 111, 112, 118 and T MAT 118 may be taken for credit. Prerequisite(s): recommended precalculus at the high school or college level. Students without precalculus should elect A MAT 100.

A MAT 113 Calculus II (4)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Techniques of integration, applications of the definite integral, conics, polar coordinates, improper integrals, infinite series. Prerequisite(s): A Mat 111 or 112.

A MAT 118 Honors Calculus I (4)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Calculus of one variable. Limits, continuity, differentiation of algebraic functions, applications of differentiation, anti-derivatives, the definite integral, transcendental functions. Honors version of first semester calculus. Same topics as A MAT 112, but topics are covered in greater depth. This course is for students with more than average ability and more than average interest in mathematics. A MAT 118 substitutes for A MAT 112 toward the prerequisite in any course. Only one of A MAT 111, 112, 118 and T MAT 118 may be taken for credit. Prerequisite(s): recommended precalculus at the high school or college level. Students without precalculus should elect A MAT 100. Open to Honors College students only.

A MAT 119 Honors Calculus II (4)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Techniques of integration, applications of the definite integral, conics, polar coordinates, improper integrals, infinite series. Honors version of second semester calculus. Same topics as A MAT 113, but topics are covered in greater depth. This course is for students with more than average ability and more than average interest in mathematics. A MAT 119 substitutes for A MAT 113 toward the prerequisite in any course. Only one of A MAT 113, 119, and T MAT 119 may be taken for credit. Prerequisite(s): A MAT 118, a grade of *A* in A MAT 112, or permission of instructor. Offered spring semester only.

A BIO 301 Molecular Cell Biology (3)

- Syllabus Reviewed in Biology BS Revision, Approved January 2022

Molecular basis of cell structure and functions in eukaryotes. Topics include: basic genetic mechanisms and protein synthesis; recombinant DNA technology, cell nucleus and control of gene expression; plasma membrane structure, cytoskeleton and extracellular matrix, intracellular compartments, protein sorting, exocytosis and endocytosis; cell signaling and cell communication. This course may not be taken for credit by students who have already completed A BIO 217. Prerequisite(s): A BIO 130 or 121 and A BIO 131 or 120, with a grade of C- or better in A BIO 121 or A BIO 131.

A BIO 344 Mammalian Anatomy Laboratory (2)

- Syllabus Reviewed in Biology BS Revision, Approved January 2022

A comprehensive mammalian gross anatomy lab. Topics include skeletal and muscular system, brain and nervous system, sense organs, endocrine system, circulatory system, lymphatic and immune system, respiratory system, urinary system, digestive system and reproductive system. Disease pathologies impacting normal body function will be examined. This laboratory includes dissection of preserved specimens, microscopic investigations and examination of skeletal samples and anatomical models. Prerequisite(s): A BIO 201, 202Z and 217 or 301.

A BIO 305 Developmental Biology Laboratory (2)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

This laboratory course examines the mechanisms of animal and plant development at the molecular and cellular level by modern and classical techniques. Topics include gametogenesis, fertilization, early and later development, cell division and morphogenesis. One laboratory period per week; additional time as required. Prerequisite(s): A BIO 201 and 202Z. Prerequisite(s) or corequisite(s): A BIO 303. Course fee applies. Consult the Schedule of Classes.

A BIO 314 Microbiology (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Introduction to the morphology, physiology, structure, genetics, and metabolism of microorganisms, including the roles played by microorganisms in medical, environmental, agricultural, and biotechnological sciences. Prerequisite(s): A BIO 212Y.

A BIO 315 Microbiology Laboratory (2)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Laboratory studies that deal with the culture and study of microorganisms, the dynamics of microbial growth, and the physiological basis of bacterial identification. One laboratory per week; additional flexible time as required. Prerequisite(s): A BIO 201, A BIO 202Z, and A BIO 212Y. Pre/corequisite(s): A BIO 314. Course fee applies. Consult the Schedule of Classes.

A BIO 410 Human Physiology (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

The functions of organ systems and their contributions to the functions of the human body as a whole. Topics to include: nervous, cardiovascular, respiratory, gastrointestinal systems and energy metabolism and temperature regulation. Two 1 1/2-hour lecture periods each week. Prerequisite(s): A BIO 201, 202Z, 217 or 301.

A BIO 411 Human Physiology Laboratory (2)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

A mixture of lab experiments and computer simulations in systemic physiology with emphasis on membrane transport and excitability, muscle contraction, cardiovascular regulation, respiration and metabolism, acid-base control, renal system physiology, and sensory physiology. Three hours laboratory and one hour discussion per week, with emphasis on writing of scientific lab reports. Prerequisite(s): A BIO 201 and 202Z. Corequisite(s): A BIO 410. Course fee applies. Consult the Schedule of Classes.

A BIO 309 Genetics Laboratory (2)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Laboratory studies that focus on the principles of transmission and molecular genetics of prokaryotes and eukaryotes and the significance of these principles to other aspects of biology. Genetic principles will be demonstrated through the utilization of model organisms such as lambda bacteriophage, Escherichia coli, Saccharomyces cerevisiae, Drosophila melanogaster, Arabidopsis thaliana, and Caenorhabditis elegans. Topics may include classical Mendelian genetics, molecular genetics and genomics, and modern applications of these techniques. One laboratory per week; additional flexible time as required. Prerequisite(s): A BIO 201, A BIO 202 and A BIO 212Y. Course fee applies. Consult the Schedule of Classes.

A BIO 478 Instrumental and Biochemical Analysis (2)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

This course (2 credit laboratory) will introduce students to analytical methods as well as classic and state-of-the-art instrumentation typically employed in accredited forensic laboratories for the extraction, separation, identification and quantitative analysis of chemical and biochemical substances. More importantly, students will complete experiments with various platforms that include Ultraviolet-Visible Spectrophotometer, Fourier Transform Infrared Spectroscopy, Mass Spectrometry, and Gas Chromatography. Laboratory topics will include casework, documentation, sample preparation, data collection and analysis, reporting, quality assurance, and laboratory safety. The laboratory will conclude with students working a sample case, reporting their findings in a written summary and oral presentation. Prerequisite(s): A BIO 365 or permission of the instructor.

A BIO 399/399Z Supervised Research for Juniors (2–3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Individual, independent research on selected topics in biology. Critical analysis of selected research papers. Junior majors in the department of biological sciences apply for this course through the prospective research adviser. Students taking two or more semesters of A BIO 399, 399Z, 499, or 499Z will prepare a poster or make an oral presentation at the Departmental Research Symposium. A copy of the final written report of each semester's work, preferably typewritten in journal format, is kept on permanent file in the department. May be taken either semester. A maximum of 6 credits may be earned in A BIO 399 and 399Z.

A BIO 499/499Z Supervised Research for Seniors (2-4)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Individual, independent research on selected topics in biology. Critical analysis of selected research papers. Senior majors in the department of biological sciences apply for this course through the prospective research adviser. A copy of the final written report of each semester's work, preferably typewritten in journal format, is kept on permanent file in the department. May be taken either semester. Students taking two or more semesters of A BIO 399, 399Z, 499, or 499Z will prepare a poster

or make an oral presentation at the Departmental Research Symposium. A maximum of 8 credits may be earned in A BIO 499 and 499Z.

A CHM 352Z Physical Chemistry Lab (3)

- Syllabus Reviewed in Chemistry BA Revision, Approved April 2023

The experimental understanding of the basic principles of physical chemistry and development of familiarity with instrumentation. Includes experiments on the electrical properties of solutions, chemical kinetics, spectroscopy, microcalorimetry and computer experiments in molecular orbital theory. The course also includes instruction on searching the chemical literature, data processing, and writing laboratory reports. One lecture and two laboratory periods each week. Prerequisite(s): A CHM 226 and 227; corequisite(s) or prerequisite(s): A CHM 350 or 444. Course fee applies. Consult the Schedule of Classes.

A CHM 417 Advanced Synthesis Laboratory (3)

- Syllabus Reviewed in Chemistry BA Revision, Approved April 2023

Experimental investigation of advanced synthetic methods for the preparation, separation and analysis of inorganic, organometallic and organic compounds with an emphasis on the former two types of materials. The development of skills and understanding for the application of complex procedures and techniques common in current practice, including airless chemistry and catalysis, as well as the exploration and application of modern spectroscopic and diffraction methods, including vibrational, electronic and NMR spectroscopies and powder X-ray diffraction. One lecture and two laboratory periods per week. Prerequisite(s): A CHM 221 and A CHM 223. Course fee applies. Consult the Schedule of Classes.

A CHM 429 Instrumental Analysis (3)

- Syllabus Reviewed in Chemistry BA Revision, Approved April 2023

Theoretical principles and chemical applications of selected methods of instrumental analysis. Main emphasis is on modern analytical methods including polarography, conductance, potentiometry, and coulometric methods, gas chromatography, mass spectrometry, atomic absorption as well as absorbance and fluorescence spectroscopy. Statistical analysis of data will be discussed. Three lecture periods per week. May not be taken by students with credit for A CHM 430. Prerequisite(s): A CHM 226 and 227.

A CHM 431 Instrumental Analysis Lab (1)

- Syllabus Reviewed in Chemistry BA Revision, Approved April 2023

Applications of the principles and methods discussed in A CHM 429. Experiments chosen for this course aid students in developing a more detailed understanding of analytical methods. Specifically, students will perform analytical experiments in absorbance, fluorescence and Raman spectroscopy, atomic absorption and gas chromatography using modern instrumentation. Statistical analysis of data will be performed. One 3.5 hour lab period per week. May not be taken by students with credit for A CHM 430. Prerequisite(s) or corequisite(s): A CHM 429. Course fee applies. Consult the Schedule of Classes.

A CHM 426 Undergraduate Research in Chemistry (3)

- Syllabus Reviewed in Chemistry BA Revision, Approved April 2023

Original experimental and theoretical research problems. A printed or typewritten final report is required. May be repeated for credit but not more than 3 credits of A CHM 425 and/or 426 may be applied toward the advanced course requirement of the chemistry major. Laboratory and conference hours to be arranged. Prerequisite(s): junior or senior standing and permission of instructor. Prerequisite(s) or corequisite(s): A CHM 424. *S/U* graded.

A CHM 447 Advanced Forensic Chemistry (3)

- Syllabus Reviewed in Chemistry BA Revision, Approved April 2023

This course focuses on current topics and analytical methods utilized in today's modern forensic laboratories. Forensic Chemistry will include topics such as introduction to criminalistics, ethical dilemmas, computer-assisted data analysis, public speaking on technical and non-technical subjects, as well as courtroom testimony. The course will also include a detailed description of how modern analytical techniques are applied to forensic chemistry. Specifically, gas chromatography, mass spectrometry, DART, headspace chromatography, TLC, liquid-liquid extraction, solid phase extraction, immunoassay and electrochemistry will be applied to the fields of forensic drug chemistry and toxicology. The course includes advanced statistical methods such as chi-square tests, multiple regression and correlation, nonparametric statistics, and analytical variances. Three lecture periods per week. May not be taken by students with credit for A CHM 450 or 451. Prerequisite(s): A CHM 226 and 227.

A CHM 448 Advanced Forensic Chemistry Lab I (2)

- Syllabus Reviewed in Chemistry BA Revision, Approved April 2023

Applications of the principles and methods discussed in A CHM 447. Experiments chosen for A CHM 448 aid the student in developing a more detailed understanding of quantitative methods. Specifically, students will perform method development in gas chromatography. Students will also perform electrochemical and immunoassay experiments. Statistical analysis of data will be performed. Two 3.5 hour lab periods per week. May not be taken by students with credit for A CHM 450 or 451. Prerequisite(s) or corequisite(s): A CHM 447. Course fee applies. Consult the Schedule of Classes.

Environmental Science Concentration Course Descriptions:

A ATM 315 (= A ENV 315) Environmental Statistics and Computation (4)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

This course builds an understanding of natural systems through an introduction to statistical and computational methods used to analyze atmospheric and environmental data. Key goals of the course are to become proficient at drawing conclusions about the behaviors of natural systems using common visualizing methods and statistically analyzing data from observations and dynamical models in a variety of Earth-systems applications. Includes a concise but comprehensive introduction to computation and programming methods suited for students with no background in computer coding via the general-purpose programming language Python. Only one version of A ATM/A ENV 315 may be taken for credit. Prerequisite(s): A ATM 210, A MAT 111 or 112 or T MAT 118. Offered spring semester only.

A ATM 327 (= A ENV 327) Meteorological and Environmental Measurement (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

Basic exposition of principles involved in the measurement of primary meteorological and environmental parameters. Topics to be covered include measurement uncertainty and the propagation of errors. Instruments for measuring temperature, pressure, humidity, wind field, solar and terrestrial radiation, precipitation, atmospheric aerosols, soil moisture, water quality, and data logging will be examined. Two lectures and one laboratory or demonstration per week. Only one version of A ENV 327 may be taken for credit. Prerequisite(s): A ATM 210; A MAT 111 or 112 or T MAT 118; A PHY 140 or 141 or T PHY 141.

A MAT 111 Algebra and Calculus II (4)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

The second semester of an integrated approach to precalculus and calculus; serves as a prerequisite to A MAT 113. Applications of differentiation, the definite integral, antiderivatives, logarithms, trigonometry, exponential functions. Only one of A MAT 111, 112, 118 or T MAT 118 may be taken for credit. Prerequisite(s): A MAT 101.

A MAT 112 Calculus I (4)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Calculus of one variable. Limits, continuity, differentiation of algebraic functions, applications of differentiation, anti-derivatives, the definite integral, transcendental functions. A MAT 118 is the honors version of A MAT 112 and substitutes for A MAT 112 toward the prerequisite in any course. Only one of A MAT 111, 112, 118 and T MAT 118 may be taken for credit. Prerequisite(s): recommended precalculus at the high school or college level. Students without precalculus should elect A MAT 100.

A MAT 118 Honors Calculus I (4)

- Syllabus Reviewed in Chemistry BS Revision, Approved April 2022

Calculus of one variable. Limits, continuity, differentiation of algebraic functions, applications of differentiation, anti-derivatives, the definite integral, transcendental functions. Honors version of first semester calculus. Same topics as A MAT 112, but topics are covered in greater depth. This course is for students with more than average ability and more than average interest in mathematics. A MAT 118 substitutes for A MAT 112 toward the prerequisite in any course. Only one of A MAT 111, 112, 118 and T MAT 118 may be taken for credit. Prerequisite(s): recommended precalculus at the high school or college level. Students without precalculus should elect A MAT 100. Open to Honors College students only.

A BIO 130 General Biology: Molecular and Cell Biology and Genetics (3)

– Syllabus Reviewed in Human Biology BS Revision, Approved January 2023

Formerly A BIO 121. First course in a two semester sequence which offers a comprehensive survey of the structures and functions common to all living systems at the molecular, cellular, organismal, and population levels. This course emphasizes molecular and cell biology, and genetics. May not be taken for credit by students who have credit for A BIO 111 or A BIO 121.

A BIO 131 General Biology: Ecology, Evolution, and Physiology (3)

– Syllabus Reviewed in Human Biology BS Revision, Approved January 2023

Formerly A BIO 120. Second course in a two semester sequence which offers a comprehensive survey of the structures and functions common to all living systems at the molecular, cellular, organismal, and population levels. This course emphasizes evolutionary principles, ecology, anatomy and physiology. May not be taken for credit by students who have credit for A BIO 110 or A BIO 120. Students must complete A BIO 131 with a *C*- or better to register for A BIO 212Y or A BIO 301. Prerequisite(s): A BIO 130 or A BIO 121.

A BIO 201 (formerly A BIO 122) Introduction to Biological Investigations I (1)

– Syllabus Reviewed in Human Biology BS Revision, Approved January 2023

First course in a two-semester laboratory sequence designed for biology majors. Students will learn the process of scientific investigation, collaborate in designing, conducting and analyzing experiments, develop the ability to communicate in scientific format and gain expertise in a variety of laboratory instrumentation, techniques, skills and procedures. One laboratory period per week. May not be taken by students with credit for A BIO 110 or A BIO 122. Prerequisite(s): A BIO 120 or A BIO 131, and A CHM

120, 124 or A CHM 115. Prerequisite(s) or corequisite(s): A BIO 121 or A BIO 130, A CHM 121, 125 or A CHM 116. Offered fall semester only. Course fee applies. Consult the Schedule of Classes.

A BIO 202Z (formerly A BIO 123Z) Introduction to Biological Investigations II (1)

– Syllabus Reviewed in Human Biology BS Revision, Approved January 2023

Second course in a two-semester laboratory sequence designed for biology majors. Students will learn the process of scientific investigation, collaborate in designing, conducting and analyzing experiments, develop the ability to communicate in scientific format and gain expertise in a variety of laboratory instrumentation, techniques, skills and procedures. One laboratory period per week. May not be taken by students with credit for A BIO 111 or 123Z. Prerequisite(s): A BIO 121 or A BIO 130, A BIO 120 or A BIO 131, A BIO 201, and A CHM 120, 124 or A CHM 115. Prerequisite(s) or corequisite(s): A CHM 121, 125 or A CHM 116. Offered spring semester only. Course fee applies. Consult the Schedule of Classes.

A BIO 212Y Introductory Genetics (4)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Genetics from the classical Mendelian Laws of inheritance to molecular genetics. Topics will include: DNA structure and replication; Mendelian genetics and recombination; population, fungal, somatic cell, and bacterial genetics; gene organization; the genetic code; mechanisms of gene expression and regulation; and applications of genetic technology. Three class periods and one discussion section. Prerequisite(s): A BIO 130 or 121 and A BIO 131 or 120, with a grade of *C*- or better in A BIO 121 or A BIO 131. Students must complete A BIO 212Y with a *C* or better to register for A BIO 365.

A BIO 330 Principles of Ecology and Evolution (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Survey of Ecology and Evolutionary Biology. Course will cover fundamental concepts and current advances in the fields of these two inter-related disciplines. Topics will include population biology, microevolution, macroevolution, community ecology, ecosystem ecology, and animal behavior. Emphasis will be on patterns and processes, and how those are studied. Prerequisite(s): A BIO 212Y.

A CHM 115 General Chemistry I and Lab (4-5)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Atomic theory, quantitative relationships in chemical change, electronic structure of atoms and chemical periodicity, chemical bonding, and states of matter. This is a combined lecture and lab. The lab includes laboratory techniques and experiments demonstrating chemical principles. Experiments including stoichiometry, calibration curves, titrations, empirical formula, solubility and chemical synthesis. Course fee applies. Consult the Schedule of Classes.

A CHM 116 General Chemistry II and Lab (4)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Elementary principles of chemical equilibrium, thermodynamics, and kinetics; electrochemistry; descriptive chemistry of the elements and their compounds. This is a combined lecture and lab. The lab includes laboratory techniques and experiments demonstrating chemical principles. Experiments including solution properties, kinetics, equilibrium, spectroscopy and a final project. Prerequisite(s): A CHM 115 or A CHM 120 and 124. Course fee applies. Consult the Schedule of Classes.

A CHM 120 General Chemistry I (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Atomic theory, quantitative relationships in chemical change, electronic structure of atoms and chemical periodicity, chemical bonding, and states of matter.

A CHM 121 General Chemistry II (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Elementary principles of chemical equilibrium, thermodynamics, and kinetics; electrochemistry; descriptive chemistry of the elements and their compounds. Prerequisite(s): A CHM 120 or 130.

A CHM 124 General Chemistry Laboratory I (1)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Introduction to laboratory techniques, experiments demonstrating chemical principles in General Chemistry I, including stoichiometry, calorimetry, and properties of some elements and compounds. Prerequisite(s) or corequisite(s): A CHM 120 or 130. Course fee applies. Consult the Schedule of Classes.

A CHM 125 General Chemistry Laboratory II (1)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Application of laboratory techniques, experiments demonstrating chemical principles of General Chemistry II, including solution properties, kinetics, equilibrium, and qualitative analysis of some anions and cations. Prerequisite(s): A CHM 124. Prerequisite(s) or corequisite(s): A CHM 121 or 131. Course fee applies. Consult the Schedule of Classes.

A PHY 140 Physics I: Mechanics (3)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

An introduction to the fundamentals of physics: Classical Mechanics. Topics include the concepts of force, energy and work applied to the kinematics and dynamics of particles and rigid bodies and an introduction to special relativity. Only one of A PHY 140 or T PHY 141 or A PHY 142 may be taken for credit. This course is generally offered in the fall semester; students taking this course in the fall semester are required to enroll in a discussion section associated with the lecture. Smaller, out of sequence sections of this course are offered in the spring and summer semester and do not require enrollment in a discussion section. Prerequisite(s) or corequisite(s): A MAT 111 or A MAT 112 or A MAT 118.

T PHY 141 Honors Physics I: Mechanics (3)

- Syllabus Reviewed in Physics BS Revision, Approved March 2022

Course content will follow A PHY 140. However, topics will be covered in more depth and at a somewhat more advanced level. T PHY 141 is the Honors College version of A PHY 142. Only one of A PHY 140 or T PHY 141 may be taken for credit. Prerequisite(s) or corequisite(s): A MAT 111 or A MAT 112 or A MAT 118. Open to Honors College students only.

Geography Specialization Courses:

A GOG 220 (= A USP 220) Introductory Urban Geography (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Introductory survey of findings and theory of urban geography, which deals with the form and function of cities. Major themes include: history of urban form; spatial structure of modern urban systems; and the internal structure of the city, emphasizing social and economic patterns.

A GOG 290 Introduction to Cartography (4)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

An introductory course in the theory and techniques of map production. Reviews and discusses the elements of cartographic theory including the relationships between human perception and map symbology. Students will produce a series of hand-drafted maps over the duration of the course.

A GOG 496 Geographic Information Systems (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Introduction to the structure, design, and application of data base management systems designed to accept large volumes of spatial data derived from various sources. The student will learn how to efficiently store, retrieve, manipulate, analyze, and display these data according to a variety of user-defined specifications. Prerequisite(s): familiarity with maps and coordinate systems.

A GOG 304 Climatology (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Survey of the fundamentals of climate system. Particular attention is paid to the explanation rather than the description of atmospheric and oceanic processes. Emphasis is given to the application of concepts of environmental physics to selected natural objects: terrestrial planets, the World Ocean, continents, cities, vegetation, animals and humans. Energy balance study at different temporal and spatial scales is used as a methodological tool to provide a better understanding of such concepts as the "greenhouse" effect, climate sensitivity, photosynthesis, the metabolism of animals, survival of humans in different climates, etc. Work on the Internet with remote weather stations and climate related resources is a part of the course project. Prerequisite(s): A GOG 101 or A ATM 103 or permission of instructor.

A GOG 375 (= A USP 375) Methods of Urban Analysis (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

This class will build a foundation for the lager field of statistical analysis and planning methodologies. Students will develop fundamental skills, such as data collection and presentation, descriptive analysis, and data interpretation. When the course successfully completed, students will be to identify different types of data, accurate present data in table and graphic format, describe and analysis data using statistic tools such as measures of central tendency and dispersion, conduct hypothesis testing, build confidence intervals and use these tools to analyze places. Prerequisite(s): A MAT 108 or equivalent.

A GOG 414 Computer Mapping (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Introduces the student to the fundamental techniques and applications of automated map production. Lectures include discussions of algorithm and program development as well as existing software packages. Students will also be introduced to current problems and research in automated map production. Covers a wide range of topics including but not limited to automated drafting, computer generated projections, coordinate systems and transformations, data structures, and discussions of algorithms for specific applications. Prerequisite(s): A GOG 290 or permission of instructor.

A GOG 484 Remote Sensing I (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Introduction to the concepts and interdisciplinary applications of remote sensing. The basic principles of theory and practice are presented for earth resource management. Photographic and non-photographic sensors are examined. Visual and digital image analysis techniques are introduced. Students will interpret color infrared, multispectral, and other sensor imagery for a variety of purposes. May not be

taken by students with credit for A GOG 385. Prerequisite(s): junior or senior standing, or permission of instructor.

A GOG 485 Remote Sensing II (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Examination of current concepts and research in digital image analysis with emphasis on multispectral and radar data sets. Students will utilize a variety of data sources including optical and digital imagery, maps, census data, ground surveys, and other GIS data layers in completing an interpretation and analysis of selected geoscience aspects of environmental concern. Methods and importance of accuracy assessment are introduced. Prerequisite(s): A GOG 484 or equivalent, or permission of instructor.

Ecosystem Specialization Courses:

A BIO 212Y Introductory Genetics (4)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Genetics from the classical Mendelian Laws of inheritance to molecular genetics. Topics will include: DNA structure and replication; Mendelian genetics and recombination; population, fungal, somatic cell, and bacterial genetics; gene organization; the genetic code; mechanisms of gene expression and regulation; and applications of genetic technology. Three class periods and one discussion section. Prerequisite(s): A BIO 130 or 121 and A BIO 131 or 120, with a grade of *C*- or better in A BIO 121 or A BIO 131. Students must complete A BIO 212Y with a *C* or better to register for A BIO 365.

A BIO 401 Ecology (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

This course covers fundamental questions in ecology, and the process of ecological research, spanning levels of organization from individual organisms to populations, communities, and beyond. The range of topics includes physiological ecology, behavioral ecology, population ecology, species interactions, community ecology, ecosystem ecology, macroecology, and applied ecology. Each week the class will address topics with a lecture, a computer lab, and a discussion. May not be taken by students with credit for A BIO 320. Prerequisite(s): A BIO 212Y, A BIO 330, and A MAT 111 or A MAT 112.

A ANT 418 Culture, Environment, and Health (3)

- Syllabus Reviewed in Anthropology BA Revision, Approved February 2022

Anthropological study of health and disease patterns in human populations with emphasis on human-made influences on the health of contemporary societies. The effects of societal and cultural factors on disease patterns, and the assessment of health status through epidemiological and anthropological methods are explored. Prerequisite(s): A ANT 119.

A ATM 301 Surface Hydrology and Hydrometeorology (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

A survey of the water cycle and its interactions with the earth and atmosphere, including the processes of precipitation, evaporation, and stream flow. Water resources and policy issues incorporated where applicable. Not open to students with credit in A ATM 408. Prerequisite(s): A ATM 210. Offered alternate fall semesters.

A BIO 329 Genetics of Human Disease (3)

- Syllabus Reviewed in Biology BA Revision, Approved April 2023

Four categories of the involvement of human genes in disease will be explored using specific examples to illustrate general phenomena. First, inheritance of diseases caused by single mutant alleles will be discussed. Second, the pre-disposition of specific genotypes to disease will be investigated highlighting the interplay between genes and between the genes and the environment. Third, genetic instabilities that give rise to genetic rearrangements and chromosome loss will be explored. Fourth, the genetic interplay between host and pathogen will be explored with respect to the evolution of protective mechanisms by the host and evasion by the pathogen, and how new pathogens emerge. For each category, multiple cases of specific diseases will be discussed with an emphasis on both the molecular basis of the genetic interactions and the population genetics of disease spread and persistence. The potential of modern genetic techniques to provide diagnosis and treatment of diseases will also be discussed. Prerequisite(s): A BIO 212Y.

A GOG 424 Landscape Ecology (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Landscape ecology is a highly interdisciplinary field, which has its roots in geography and ecology, and has direct relevance to landscape planning and architecture. It deals explicitly with interactions between spatial pattern and ecological processes, including various human influences. This introduction course covers the basic concepts, principles, and methods of landscape ecology, as well as its important applications in nature conservation, resource management, and landscape design and planning. Prerequisites: a general ecology-focused course at the college level or permission of instructor.

A GOG 433Y Urban Ecology (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

A major landmark has been crossed in the 21st century when humans became an "urban" species, Homo sapiens "urbanus." Indeed, more than 50% of the world's, and 80% of the U.S. population now resides in cities. The course addresses problems of understanding urban areas from the ecological viewpoint. Central to this understanding is the recognition that humans are organisms, but ones with unique capabilities of modifying the environment on multiple scales. A crucial concept to be introduced is the distinction between ecology in cities and ecology of cities. The former addresses how organisms (including humans) respond to and influence the physical and biological characteristics of cities. The latter studies the role of cities within broader geophysical and ecological processes such as global biogeochemical cycles, local and regional climates, patterns of biodiversity and organism movements, and ecological and social responses to disturbances. This course will look at both of these aspects through a theoretical lens of modern urban ecology. Urban areas are socio-ecological systems, a mosaic of landscapes, in which humans and their activities are a component of, rather than a disturbance imposed on, (urban) ecological systems. The approach taken in this course will be to facilitate students' learning through a combination of lecture, discussion and practical homework exercises. Prerequisites: a general ecology-focused course at the college level or permission of instructor.

A GOG 496 (= A USP 456) Geographic Information Systems (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Introduction to the structure, design, and application of data base management systems designed to accept large volumes of spatial data derived from various sources. The student will learn how to efficiently store, retrieve, manipulate, analyze, and display these data according to a variety of user-defined specifications. Prerequisite(s): familiarity with maps and coordinate systems.

Climate Change Specialization Courses:

A ATM 306 Climate Variability and Change (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

This course will be organized in two parts. Part I will cover seasonal to multi-decadal natural variability of the global climate system; the El Nino Southern Oscillation (ENSO); monsoons, droughts and their causes; variability of high impact weather such as hurricanes; the fundamental physics of the coupled atmosphere-land-ocean system and our ability to predict it. Part II will cover anthropogenic climate change, including an objective assessment of observed trends in the past century and the anthropogenic contribution; theory of climate change linked to increased greenhouse gases; climate change predictions and the IPCC process. Prerequisite(s): A MAT 111 or A MAT 112 or T MAT 118; A ATM 210. Corequisite(s): A ATM 315 or permission of instructor.

A ATM 405 Water and Climate Change (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

Water is essential for human society and the environment. Global warming and climate change are expected to impact our water supply and the water balance of the natural ecosystem. Potential water shortages due to population growth and climate change are a world-wide environmental issue. Starting with an introduction to the global water cycle and Earth's climate, this course aims to provide students with in-depth understanding of the key roles of water in Earth's climate and how climate change may affect the global water cycle and the freshwater resources. Prerequisite(s): A ATM 210 and A MAT 111 or A MAT 112 or T MAT 118. Offered alternate fall semesters only.

A ATM 301 Surface Hydrology and Hydrometeorology (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

A survey of the water cycle and its interactions with the earth and atmosphere, including the processes of precipitation, evaporation, and stream flow. Water resources and policy issues incorporated where applicable. Not open to students with credit in A ATM 408. Prerequisite(s): A ATM 210. Offered alternate fall semesters.

A ATM 304 Air Quality and Air Pollution Policy (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

This course deals with scientific, policy, and regulatory issues associated with air quality for the ambient (outdoor) environment and indoor environments. Topics include pollutant sources, transport, transformation and deposition, environmental and human health consequences, air quality and emission standards, basic air pollution monitoring and abatement methods, and legislation and policies in historical perspective. Prerequisite(s): A ATM 210; A MAT 111 or A MAT 112 or T MAT 118; A PHY 140 or T PHY 141. Offered alternate fall semesters.

A ATM 307 (= A CHM 307) Introduction to Atmospheric Chemistry (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

Chemical principles and concepts leading to understanding the composition and change in the chemical/atmospheric environment; sources and links of chemical constituents; chemistry of the troposphere and stratosphere; measurement and theory of greenhouse gases; global pollution and ozone depletion. Only one version of A ATM/A CHM 307 may be taken for credit. Prerequisite(s): A MAT 111 or 112 or 118 or T MAT 118; A PHY 105 or 140 or 141 or T PHY 141; A CHM 121 or 131 or T CHM 131.

A ATM 335 Meteorological Remote Sensing (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

Satellite remote sensing from UV to microwave including the principles of atmospheric radiative transfer, descriptions of important satellite orbits and sensors, the retrieval of atmospheric variables from active and passive systems, and basic principles of interpretation. Prerequisite(s): A MAT 111 or 112 or 118 and A ATM 210. Offered alternate spring semesters.

A ATM 413 Weather, Climate Change, and Societal Impacts (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

Survey of the many ways high impact weather and climate change affect human society. Each topic will cover the science behind different weather or climate phenomena and also explore the economic and/or social ramifications of these phenomena. Possible topics include severe thunderstorms, hurricanes, winter storms, solar flares, anthropogenic climate change, sea level rise, and droughts/floods. Possible ramifications of these topics on society include socioeconomic losses, risk perception, transportation disruption, human history, energy usage/markets, and climate policy. Prerequisite(s): A ATM 210 or equivalent, and A ATM/A ENV 315 or equivalent. Offered spring semester only.

A MAT 113 Calculus II (4)

- Syllabus Reviewed in Mathematics BS Revision, Approved April 2023

Techniques of integration, applications of the definite integral, conics, polar coordinates, improper integrals, infinite series. Prerequisite(s): A Mat 111 or 112.

Climate Change Specialization Courses:

A ATM 304 Air Quality and Air Pollution Policy (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

This course deals with scientific, policy, and regulatory issues associated with air quality for the ambient (outdoor) environment and indoor environments. Topics include pollutant sources, transport, transformation and deposition, environmental and human health consequences, air quality and emission standards, basic air pollution monitoring and abatement methods, and legislation and policies in historical perspective. Prerequisite(s): A ATM 210; A MAT 111 or A MAT 112 or T MAT 118; A PHY 140 or T PHY 141. Offered alternate fall semesters.

A ANT 418 Culture, Environment, and Health (3)

- Syllabus Reviewed in Anthropology BA Revision, Approved February 2022

Anthropological study of health and disease patterns in human populations with emphasis on human-made influences on the health of contemporary societies. The effects of societal and cultural factors on disease patterns, and the assessment of health status through epidemiological and anthropological methods are explored. Prerequisite(s): A ANT 119.

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Water is essential for human society and the environment. Global warming and climate change are expected to impact our water supply and the water balance of the natural ecosystem. Potential water shortages due to population growth and climate change are a world-wide environmental issue. Starting with an introduction to the global water cycle and Earth's climate, this course aims to provide students with in-depth understanding of the key roles of water in Earth's climate and how climate change may

affect the global water cycle and the freshwater resources. Prerequisite(s): A ATM 210 and A MAT 111 or A MAT 112 or T MAT 118. Offered alternate fall semesters only.

A ATM 413 Weather, Climate Change, and Societal Impacts (3)

- Syllabus Reviewed in Atmospheric Science BS Revision, Approved October 2022

Survey of the many ways high impact weather and climate change affect human society. Each topic will cover the science behind different weather or climate phenomena and also explore the economic and/or social ramifications of these phenomena. Possible topics include severe thunderstorms, hurricanes, winter storms, solar flares, anthropogenic climate change, sea level rise, and droughts/floods. Possible ramifications of these topics on society include socioeconomic losses, risk perception, transportation disruption, human history, energy usage/markets, and climate policy. Prerequisite(s): A ATM 210 or equivalent, and A ATM/A ENV 315 or equivalent. Offered spring semester only.

A GOG 496 (= A USP 456) Geographic Information Systems (3)

- Syllabus Reviewed in Geography BA Revision, Approved March 2023

Introduction to the structure, design, and application of data base management systems designed to accept large volumes of spatial data derived from various sources. The student will learn how to efficiently store, retrieve, manipulate, analyze, and display these data according to a variety of user-defined specifications. Prerequisite(s): familiarity with maps and coordinate systems.

Financial Market Regulation Concentration Course Descriptions:

B ACC 211 Financial Accounting (3)

- Syllabus Reviewed in Digital Forensics BS Revision, Approved October 2018

A thorough introduction to the basic financial statements including the balance sheet, income statement, and statement of cash flows, with a focus on accounting information that is available to individuals outside an organization. The course provides an introduction to the concepts, terminology and principles of financial accounting. Students learn about accounting as an information development and communication function that supports economic decision-making. The course enables students to analyze financial statements; derive information for personal and organizational decisions from financial statements; and better understand business entities. Only one version of B ACC 211 may be taken for credit. Not open to freshmen. Intended accounting and business majors should enroll in B ACC 211 in the first semester of their sophomore year.

B ACC 313 Financial Statement Analysis (3)

- Syllabus Reviewed in Business Administration BS Revision, Approved February 2023

Intensive course in the analysis of financial statements. Topics include, but are not limited to, revenue and expense recognition, the validity of various measures of profit, footnote disclosures, pro forma financial statements, and valuation of balance sheet components. A study of ratio analysis considers the impact of different accounting conventions. Emphasis is on the relevance of financial statements for key stakeholders. Prerequisite(s): declared School of Business majors. B ACC 211 and B ACC 222 and open only to students whose concentration is Financial Analysis. Not open to students with credit in B ACC 311 and/or B ACC 312.

B FIN 301 Corporate Financial Policy and Strategy (3)

- Syllabus Reviewed in Business Administration BS Revision, Approved February 2023

Continuation of B FIN 300, focusing on various investment and financing decisions of the firm. Topics include financial analysis, risk measurement, capital budgeting, capital structure, and dividend policy decisions made in an environment of uncertainty. Case course supplemented with a text and extensive computer spreadsheet assignments. Prerequisite(s): declared School of Business majors. B FIN 300. Not open to students who are concurrently registered for or who have completed B FIN 400.

B FIN 333 Investment Management (3)

- Syllabus Reviewed in Business Administration BS Revision, Approved February 2023

This course covers equity and equity-linked derivative securities, and portfolio management. Examines the institutional environment in which investment decisions are made. Topics include portfolio theory, the behavior of equity securities prices, and various models for the pricing of common stock and equity derivative instruments. Term project requires presentation of securities selection and portfolio management strategy. Extensive computer spreadsheet assignments. Prerequisite(s): declared School of Business majors. B FIN 300 and 301. Not open to students with concurrent enrollment in B FIN 380 or who have successfully completed B FIN 380.

B FIN 375 Money and Capital Markets (3)

- Syllabus Reviewed in Business Administration BS Revision, Approved February 2023

This course covers money and capital markets and the analysis of fixed-income securities. Topics include the functions of the Fed and its monetary policy, valuation of bonds, management of interest rate risk, and the pricing of derivatives such as interest rate swaps credit analysis, fixed income portfolio management. The use of computer spreadsheets is emphasized heavily. Prerequisite(s): declared School of Business majors. B FIN 300. Not open to students who are concurrently registered for or who have completed B FIN 410.

C INF 108 Programming for Problem Solving (3)

- Syllabus Reviewed in Informatics BS Revision, Approved May 2021

Ever thought about a problem and said, "There should be an app for that"? This course provides an introduction to computer programming using modern programming languages as a way to solve problems. It focuses on programming concepts and fundamentals within the context of solving real world problems.

B ITM 215 Information Technologies for Business (3)

- Syllabus Reviewed in Business Administration BS Revision, Approved February 2023

This course focuses on the role of information systems and data analytics in solving business problems. Students will understand the role and importance of IT/IS within organizations and will develop business-oriented applications using Microsoft Excel (comprehensive / advanced level) to achieve a solid base for development of information systems and data analytics applications in business, accounting, or other areas. Topical discussions may include the fundamentals of information technology (IT), emerging trends in data analytics, Customer Relationship Management, Supply Chain Management, elements of e-business, and information security. The course may be offered in a blended/hybrid format. The course is not open to freshmen and is offered in both fall and spring semesters.

B ITM 330 Improving Business Performance with Information Technologies (3)

- Syllabus Reviewed in Business Administration BS Revision, Approved February 2023

This course comprehensively covers databased design and development, including, theory, modeling, normalization, management, and administration. In this class students will use database technologies for developing business applications using relational database tools (e.g. Access, and Visual Basic for Applications (VBA)). The specific tools used in the course may change over time but the fundamental course of the course will remain the same. The course will also engage students in learning the Structured Query Language (SQL) which the students will use in their application development. This course will help students to understand the importance of databases in an organization and to apply databases to new business problems. The class has a strong hands-on component that will involve extensive use of computers during the class and for homework assignments and projects. Prerequisite(s): B ITM 215 and A MAT 108 or equivalent course(s), junior or senior standing. Offered in fall, spring, and summer (may not be offered every summer).

A MAT 108 Elementary Statistics (3)

- Syllabus Reviewed in Criminal Justice BA Revision, Approved July 2023

Frequency distributions, measures of central tendency and dispersion, probability and sampling, estimation, testing of hypotheses, linear regression, and correlation. Only one of A MAT 108 and B ITM 220 may be taken for credit. Not open for credit by students who have taken A MAT 308. Prerequisite(s): three years of high school mathematics.

University at Albany

Interdisciplinary Studies BS – Syllabi for Registration Update:

Concentration in Biochemistry & Molecular Biology – Syllabi:

ABIO 302 – Cell Biology Laboratory
ABIO 303 – Developmental Biology
ABIO 335 – Immunology
ABIO 336 – Immunology Laboratory
ABIO 341 – Neurobiology
ABIO 342 – Neurobiology Laboratory
ABIO 365 – Biological Chemistry
ABIO 366 – Biological Chemistry II

ACHM 221 – Organic Chemistry II
ACHM 223 – Organic Chemistry II Laboratory
ACHM 425 – Undergraduate Research in Chemistry

Concentration in Environmental Science – Syllabi:

AATM 210 – Atmospheric Structure, Thermodynamics and Circulation

AENV 105 – Introduction to Environmental Science
AENV 106 – Introduction to Environmental Science Laboratory
AENV 221 – Understanding the Earth
AENV 250 – Sustainable Development: Energy and Resources
AENV 302 – Ocean Science
AENV 404 – The Adirondack Environment
AENV 450 - Paleoclimatology
AENV 480 – Special Topics in Environmental Science
AENV 490 – Major Topics in Environmental Science
AENV 496 – Environmental Internships

AGOG/AUSP 220 – Introductory Urban Geography
AGOG/ALCS 354 – Environment and Development
AGOG 460 – People, Place, and Power

ABIO 402 – Evolution

RPOS 399 – Selected Topics

HSPH 321 – Global Environmental Issues and Their Effect on Human Health
HSPH 332 – Introduction to Biostatistics

Concentration in Financial Market Regulation – Syllabi:

BFIN 236 – Crisis and Regulation in Financial Market Regulation
BFIN 300 – Financial Management
BFIN/RPAD 435 – Law in Financial Market Regulation

ABIO 302 Cell Biology Laboratory Fall Syllabus

Course number: ABIO 302
Credit Hours: 2
Instructor: Dr. Don Orokos
Office: Biology 112
Phone: 442-4308
E-mail: dorokos@albany.edu
Office Hours: Tuesday and Thursday 9:00am to 10:00am or email for an appointment
Prererequisite(s) or corequisite(s): A BIO 217 or A BIO 301 and 365

Schedule of Experiments and General Overview Information may change during Fall Semester.

Date	***Laboratory Exercise***	***Assignment(s) Due***
1. 8/22- 8/23	1. Introduction and Calculations Assignment	
2. 8/29- 8/30	2. Advanced Microscopy	Calculations Worksheet
3. 9/5 – 9/6	3**. Classes Suspended**	
4. 9/12 – 9/13	4. Cell Culture	Advanced Microscopy Worksheet
5. 9/19 – 9/20	5. Extracellular Matrix	Cell Culture Take Home Quiz
6. 9/26 – 9/27	6. Cytoskeleton	
7. 10/3 – 10/4	7. **Exam I**	
8. 10/10 – 10/11	8. **Classes Suspended**	
. 9. 10/17 - 10/18	9. Energy Conversion	
10. 10/24 - 10/25	10. DNA I	Energy Conversion Take Home Quiz

11. 10/31 - 11/1	11. DNA II & III	
12. 11/7 – 11/8	12. DNA IV	
13. 11/14– 11/15	13. Plasma Membrane	DNA Standard Curve Take Home Quiz
14. 11/21– 11/22	14. **Exam II**	Plasma Membrane Worksheeet

General Overview for Cell Biology (ABIO 302; 2 credits)

Course Description: Introduction to modern techniques in cell biology, including advanced optical microscopy, DNA purification and analysis, electrophoresis, cell homogenization and fractionation, transfection, and cell culture. These techniques will be used to investigate the cytoskeleton, membrane structure and permeability, mitochondrial respiration, DNA replication, and cell adhesion. One laboratory period per week; additional time as required. Prerequisite or co-requisite: ABIO 217; ABIO 365.

Learning Objectives:

1. To have a better understanding of the Cell Biology concepts and theories emphasized in ABIO 302
2. To gain a critical understanding of various applications of Cell Biology techniques.
3. To develop a number of key Cell Biology laboratory skills.

Laboratory Protocol: All students in ABIO 302 will complete a weekly 15 minute in-person laboratory Quiz followed by a 30-40-minute PowerPoint presentation and a three-hour hands-on laboratory component.

1. Safety Precautions
    a. Students, Instructor and TA entering Biology B-23's bench area must be wearing the following PPE:
        i. Lab Coat (required-own personal lab coat)
        ii. Non-Disposable Safety Glasses (required-own personal safety glasses)
        iii. Disposable Gloves (required-provided in B-23)
    b. All disposable PPE (i.e., gloves) will be disposed in designated Biohazard Trash Container.

2. "At the Bench"
    a. Students will be working in group of two during the required 4-hour practical component and perform and/or adhere to the following:
        i. Except for the laboratory protocol, students are not allowed to bring any personal items to the Bench Station area. All personal items will be stored in an assigned cubby.
        ii. Each of the eight Bench Stations will have the following items:
            1. A copy of the laboratory protocol plus all required equipment, consumables, slides, buffers, and reagents to perform each laboratory experiment/exercise.
        iii. Students will disinfect their designated bench area before and after each 4-hour laboratory period with 10% Bleach followed by 70% Alcohol.
        iv. Each student will also sanitize before and after each 4-hour practical component all equipment, reagent bottles, etc. with 70% Alcohol.

3. ABIO 302 "Pivot Plan"
    a. This Pivot Plan will be initiated only after the University at Albany deems that all in-person courses must now be delivered totally on-line. In-person instruction delivery will resume only after approval from UAlbany Administration.

Worksheets:

Part of your final grade for this Cell Biology course is to complete three worksheets. For the Worksheet

assignments to be graded, each student must submit a hardcopy copy of which must be submitted no later than 6pm the day that the assignment is due. Those assignments not submitted on time will result in **10% OFF EACH DAY LATE** whereas assignments that are 7 days late will not be graded and a final grade of a zero will be assigned for that 7-day late assignment.

Weekly Quiz:
All students registered for ABIO 302 will be required to take a weekly in-person quiz. Each quiz will be given the first 15 minutes of the class period. Information on the quiz will most likely include information and material from current and past (i.e. laboratory exercise, required reading(s), and PowerPoint presentation) labs. Nine quizzes will be given throughout the semester, whereas only seven quizzes will count towards your final grade. There will be no make-up quizzes because each student will be allowed to drop two quizzes for ABIO 302 during the Fall 2022 semester. Some of the weekly quizzes will have a take-home component. In those cases, each student must submit a hardcopy of the take-home part of that week's quiz at the beginning of the laboratory period—no exceptions--a zero grade will be assigned to the take-home part of the weekly quiz if not turned in on time.

Notebook:
All students enrolled in ABIO 302 must maintain a notebook throughout the Fall 2022 semester. The content in the three ringed binder should be written in ink and contain the following sections: Title, Purpose, Background, Methodology, Materials, Results and Conclusion. Each notebook should have enough detail so that someone else is able to read and understand what, why and how the experiment(s) were performed followed by final data and a conclusion. At the beginning of lab, Dr. Orokos/TA will review all notebooks noting the required Pre-Experimental and Post-Experimental information with a final numerical score being assigned to the weekly quiz grade.

Lab Performance: All students in ABIO 302 will also receive a weekly grade based on overall conduct and bench skills during the in-person laboratory component of ABIO 302. This Lab Performance Grade is all or none and each student must satisfy all the goals below to earn a point each week.

- Observe all safety standards of which includes wearing all required Personal Protection Equipment (i.e., a mask, eye protection, lab coat and gloves) during the 4-hour in-person lab component.
- Arrive and leave lab on time.
- Active participant during the 4-hour hands-on laboratory component.
- Act professionally and respectfully towards fellow ABIO 302 classmates, teaching assistant, and instructor.
- Perform all lab techniques properly and safely.
- Use all equipment and consumables properly and safely.
- Pickup/straighten up all equipment and consumables at the assigned workstation.
- Discard all waste into the proper waste containers.
- Properly decontaminate benchtop and all equipment at assigned workstation.
- Follow all weekly instructions and announced revisions/changes.

Attendance:
Mandatory. If you can't get to class, let me know in advance by e-mailing me at dorokos@albany.edu. In addition, you must bring your written excuse to Dr. Orokos (Biology 112) for administrative approval for missing the lab. Undefined absences on your part will result in failing grades for all assignments that week. You are also expected to stay until the laboratory period is complete. Do not schedule doctor appointments, work, interviews, etc. for a time that will interfere with lab. A class withdrawal from ABIO 302 is strongly recommended for those students who have missed two or more laboratory periods.

Absence Due to Religious Observance:
Instructors must explicitly refer to New York State Education Law (Section 224-A) whereby campuses are required to excuse, without penalty, individual students absent because of religious beliefs, and to provide equivalent opportunities for make-up examinations, study, or work requirements missed because of such absences. Faculty should work directly with students to accommodate religious observances. Students should notify the instructor of record in a timely manner.

Academic Integrity:
See Undergraduate Bulletin for details. Deviations will be treated according to university regulations. "Claims of ignorance, unintentional error, or personal or academic pressures are not sufficient reasons for violations of

academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly." (University's *Standards of Academic Integrity Policy*).

Penalties and Procedures for Violations of Academic Integrity

The course instructor is responsible for determining when a student has violated academic integrity in a course…. When a faculty member determines that a student has violated academic integrity, he or she will inform the student and impose an appropriate sanction. Faculty members must respond in a manner most appropriate to the particular infraction and the circumstances of the case in question, according to his or her best judgment. **Penalties for violations of academic integrity may include, but are not limited to, the following:**

1. Warning without further penalty, or with a requirement that an assignment be redone without a breach of academic integrity and resubmitted
2. Lowering of an assignment/exam grade
3. Assigning a failing grade on a paper containing plagiarized material
4. Assigning a failing grade on any examination in which cheating occurred
5. Lowering a course grade
6. Giving a failing grade in a course or other academic exercise

In addition, faculty members encountering a violation of academic integrity in their courses are <u>required</u> to complete and file the Violation of Academic Integrity Report. The report should indicate the sanction imposed and a brief description of the incident. Faculty filing a VAIR will submit copies both to the Vice Provost for Undergraduate Education or Graduate Education, as appropriate, and to the student. If a faculty member informs the student that he or she will receive a failing grade for the course as a whole or for a component of the course as a result of academic dishonesty, the student receiving such a penalty will not be permitted to withdraw from the course, or to change the grading basis of the course from A-E to S/U. Students who feel they have been erroneously penalized for an academic integrity infraction, or who think that a penalty is inappropriate, may make use of the grievance procedures, beginning with the Department and the College/School where the course was offered. Each College/School of the University has procedures for students who seek to dispute grades assigned or penalties imposed for academic infractions. Copies of the procedures are maintained in the College/School Deans' Offices or on their respective websites.

VAIR for Undergraduate Studies:
https://www.albany.edu/undergraduateeducation/files/Violation_of_Academic_Integrity_Report.docx

<u>Possible Points:</u> Based on the following:

Exam I&II (20 points each x 2)	40
Worksheets (5 points x 3)	15
Lab Performance (1 points per 10 labs)	10
Weekly Quiz (9 total, 5 points x 7)	35
TOTAL POINTS	100

<u>Letter Grade:</u> ABIO 302 Cell Biology Laboratory course will include the following letter grades: A, A-, B+, B, B-, C+, C, C-, D+, D, D-, E. Each student's final letter grade for this course will be based on the total number of points earned throughout the semester. Final (+/-) grades will be determined only after final grades have been submitted for all three sections of ABIO 302.

1. A Range=90 points or more
2. B Range =80 to 89 points
3. C Range =70 to 79 points
4. D Range =60 to 69 points
5. E Range =59 points or less

<u>Lab Fee:</u>

$100 lab fee is included in your tuition bill. If your tuition is not paid, a hold will be placed on your records.

<u>Textbooks:</u>

1). Handouts for this course will be posted on Blackboard. Each student in ABIO 302 is required to bring a hardcopy of the weekly laboratory protocol to the 4-hour in-person component. (Required)

2). Undergraduate cell biology textbook. (Strongly recommended)

<u>Laboratory Attire:</u>

All Cell Biology students registered in ABIO 302 must wear at all times in Biology B-23 a lab coat, appropriate eye protection and gloves. The lab coat and eye protection items can be purchased at the Chemistry Store. The Biology Department will provide disposable gloves of which will be available in B-23. Failure to bring these required PPE

items will prevent you from entering Biology B-23. Eating and drinking are prohibited in B-23.

Title IX Information:
Title IX of the Education Amendments of 1972 is a federal civil rights law that prohibits discrimination on the basis of sex in federally funded education programs and activities. The SUNY-wide Sexual Violence Prevention and Response Policies prohibit offenses defined as sexual harassment, sexual assault, intimate partner violence (dating or domestic violence), sexual exploitation, and stalking. The SUNY-wide Sexual Violence Prevention and Response Policies apply to the entire University at Albany community, including students, faculty, and staff of all gender identities. The University at Albany provides a variety of resources for support and advocacy to assist individuals who have experienced sexual offenses. Confidential support and guidance can be found through the Counseling Center (518-442-5800, https://www.albany.edu/counseling_center/), the University Health Center (518-442-5454, https://www.albany.edu/health_center/), and the Interfaith Center (518-489-8573, https://www.albany.edu/spirituality/onCampus.shtml). Individuals at these locations will not report crimes to law enforcement or university officials without permission, except in extreme circumstances, such as a health and/or safety emergency. Additionally, the Advocates at the University at Albany's Advocacy Center for Sexual Violence are available to assist students without sharing information that could identify them (518-442-CARE, https://www.albany.edu/advocacycenter/).
Sexual offenses can be reported non-confidentially to the Title IX Coordinator within The Office for Equity and Compliance (518-442-3800, https://www.albany.edu/equity-compliance/, Building 25, Room 117) and/or the University Police Department (518-442-3131, http://police.albany.edu/).

Please note, faculty members are considered "responsible employees" at the University at Albany, meaning that they are required to report all known relevant details about a complaint of sexual violence to the University's Title IX Coordinator, including names of anyone involved or present, date, time, and location.

*********In case of an emergency, please call 911*********

Contact Information:
Instructor: Dr. Donald Orokos
Office: Biology 112
Phone: 442-4308
E-mail: dorokos@albany.edu
Office Hours: Tuesday and Thursday 9:00am to 10:00am or email for an appointment.

Teaching Assistant: Kathryn Piper
Office Hours: 9-11 am on Wednesdays
Office: Zoom, https://albany.zoom.us/my/kathrynpiper
E-mail: kpiper@albany.edu

Fall 2022
DEVELOPMENTAL BIOLOGY (ABIO 303)

Tuesday/Thursday 9AM-10:20AM, LC21

Course number: ABIO303
Credit hours: 3
Instructor: Professor Paolo E. Forni, Ph.D.
Office: LSRB 1038
Email: pforni@albany.edu [*PLEASE include 303 in the subject line*]
Phone : (518) 442-4374

Teaching modality: In person
Blackboard page: Fall 2021-Developmental Biology
Class dates: August 22- December 5, 2022, Tuesday/Thursday 9:00AM-10:20AM**,** LC21
Office hours: Tuesday and Thursday 1-2PM

- **Course Prerequisites**: Bio 212, General Genetics

- ***Course Web page in Blackboard "***Fall 2021-Developmental Biology" *Includes course syllabus, and other class tools, updates, lecture materials, and links to relevant material. You should check this site weekly*.

- **Course Description**: We will investigate a range of developmental processes and address the following questions: How are genes regulated? How do cells communicate? How does a single cell, the fertilized egg, develop into a multicellular organism that has complex physiological systems? What are the early events in development, including cell division, differentiation, and tissue formation, that ensure that tissues and organs form in the correct positions with specialized functions? What molecular mechanisms control these events? What are stem cells? How do genetic mutations lead to developmental diversity? What is the relationship between genetic mutations and evolution?
  The course will focus on primary developmental processes in invertebrate and vertebrate model systems and will analyze the role of specific sets of genes in these processes.

  Goal. The overall goal of this course is to incorporate information from genetics, cell biology, embryology, and molecular biology into a coherent understanding of development. At the end of this course, the students will understand the language of development and the role of developmental genetics in controlling the developmental processes of different organisms.

  Topics that will be discussed during the lectures include*:*

- *Mechanisms of Developmental Organization*
- *Mechanisms of Developmental Patterning*
- *Differential Gene Expression: Mechanisms of Cell Differentiation*
- *Cell-to-Cell Communication: Mechanisms of Morphogenesis*
- *Stem Cells: Their Potential and Their Niches*
- *Gametogenesis*
- *Fertilization: Beginning a New Organism*
- *Specification in Snails and Nematodes*
- *The Genetics of Axis Specification in* Drosophila
- *Amphibians and Fish*
- *Neural Tube Formation and Patterning*

- **Required Text**: Gilbert-Barresi ***Developmental Biology, 12th Edition, avoid buying older versions.***

  Supplementary materials will be placed on the course web site, as needed.

- **Accommodations** for students with disabilities: If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. To request academic accommodations (for example, a note taker), students must contact Disabled Student Services Campus Center 137, Phone: (518) 442-5490, http://www.albany.edu/studentlife/DSS/index.html). For additional help, you may contact the Office of Academic Support Services (website http://www.albany.edu/eop/).
  Accommodating Disabilities Policy

- **Academic honesty** is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable: **Plagiarism, Cheating on Examinations, Multiple Submission, Forgery, Sabotage, Unauthorized Collaboration, Falsification and Bribery.** Details about each of these can be found at
  http://www.albany.edu/undergraduate_bulletin/regulations.html

- Religious Beliefs
- Department Grievance Policy
- Campus Workplace Violence Prevention Policy and Program
- Standards of Academic Integrity
- Sexual Harassment Policy

- **Exams and Grading**: There will be 4 exams (schedule below) of equal value.
  The final grade (A-E) will be determined by the average of your best 3 scores out of the 4 mandatory exams. **Everybody needs to take four exams, if one exam is skipped that will be graded 0 and averaged with the other 3.**

  NOT CURVED GRADING
  Exam Cutoffs: 85.0=A, 80.0=A-; 75.0=B+; 70.0=B; 65.0=B-; 60.0=C+; 55.0=C; 50.0=C-; 45.0=D+; 40.0=D; 35.0=D-; 30.0=E

- Alternate/makeup exams will be given ONLY to students providing official documentation as a proof of a compelling reason: Illness, medical emergencies or religious observance. Details about these are available at http://www.albany.edu/undergraduate_bulletin/regulations.html#attendance.
  FYI, a work-related conflict is not a valid excuse! Exams missed for medical reasons require an acceptable written excuse from a physician in order to take a makeup exam.

As noted above, makeup exams will not be offered except in medical emergency and will **require an acceptable written excuse from a physician** to qualify for a makeup exam.

The final grade will be determined by the average of the 3 highest scores out of 4 tests.
Every student must take 4 exams. If one exam is skipped that will be averaged as 0.

Tentative calendar for the 4 exams:

Exam 1:	***September 20***	***at 9 AM***
Exam 2:	***October 20***	***at 9 AM***
Exam 3:	***November 10***	***at 9 AM***
Exam 4:	***December 1***	***at 9 AM***

All exams can be completed in 30', however 1h' of time will be given to complete it.

- **The exams will include questions from the lectures material that are not covered in the text.**

- **Attendance:** Attendance to lectures **is mandatory.**

Tentative learning sequence and examination schedule*:

Module 1: Exam 1

- Lecture 1. Introduction, what is developmental biology?
- Lecture 2. Development overview tracking cell lineage, evolutionary embryology, patterning
- Lecture 3. Stem cells and cell differentiation, autonomous and conditional specification, genetic lineage tracing
- Lecture 4. Differential gene expression, genetic mechanisms in development, transcriptional regulation, epigenesis
- Lecture 5. Genetic mechanisms in development, transcriptional regulation, epigenesis.
- Lecture 6. miRNA, genomic imprinting, mRNA splicing, and self-avoidance of neurons, posttranscriptional regulation of translation, mRNA sub-cellular localization.
- Lecture 7. Cell-cell interactions: adhesion and recognition, the molecular basis of germ layer formation

Module 2: Exam 2

- Lecture 8. Class-8: Cell Signaling, Induction and Competence.
- Lecture 9. Cell-cell communication, signal transduction.
- Lecture 10. Signal transduction part II, meiosis and gametogenesis
- Lecture 11. Gametogenesis and fertilization part II, acrosome reaction, sperm-egg recognition, chemotaxis, fast and slow block of polyspermy in sea urchins, egg activation, pronuclear congression.
- Lecture 12. Internal Fertilization in mammals, chemotaxis.
- Lecture 13. Sperm activation, the molecular mechanism controlling egg sperm interaction and polyspermy in mammals
- Lecture 14. Mollusks development, right left coiling, autonomous and conditional development, D-Marcomeres, and polar lobe

Module 3: Exam 3

- Lecture 15. C. Elegans as a model. C. Elegans development. Inductive and autonomous development of endoderm and mesoderm.
- Lecture 16. Drosophila melanogaster. Overview of early development. Body Axis, the role of maternal effect genes.
- Lecture 17. Drosophila melanogaster. PAR genes, segmentation genes, pair-rule genes, segment polarity genes.
- Lecture 18. Drosophila melanogaster. Dorsal ventral axis. Hox genes and the body blueprint.
- Lecture 19. Amphibians. Fertilization, gastrulation, experiments of Spemann and Mangold. The organizer.

Module 4: Exam4

- Lecture 20. Amphibians. The Nieuwkoop center, dorsal-ventral axis role of Wnt and BMP signaling.
- Lecture 21. Amphibians. Discovering the paracrine factors released by the organizer. Role of BMP and BMP antagonists in defining the neural plate.
- Lecture 22. Amphibians. Anterior posterior axis, right and eft, intro to the patterning of the nervous system.
- Lecture 23. Ectodermal derivatives, neurogenesis and neural crest. Neural tube formation and closure.

**This schedule might change*

ABIO 335 Immunology - Spring 2022, Course # 1230
January 24 – May 4, 2022

Time: Tue and Thu 9:00 – 10:20 am
Mode of Instruction: In-person
Location: LC23

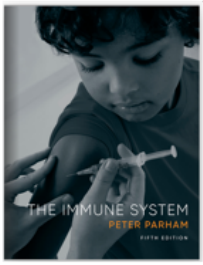
Instructor: Linda Mayerhofer, PhD
Email: lmayerhofer@albany.edu
Zoom Office Hours: Mon/Wed 11:00 am - 12:30 pm,
Tue/Thu 2:30 – 4:00 pm, and other times by appointment
Credit Hours: 3.0
Pre- or Co-requisite Bio365

Required Materials:

Textbook: The Immune System, by Peter Parham, **NEW** 5th Edition, 2021 (W.W. Norton). Choose from the following, which are available from the publisher: https://digital.wwnorton.com/immunesystem5, the campus bookstore or directly through Blackboard for the digital options (Go to the Course Materials folder and when you first click on a link, the welcome page should pop up for you to select the desired materials.

- **Very Important** – Watch the video "How to Register for InQuizitive with Blackboard": https://www.youtube.com/watch?v=bEr2ah0dSok&t=14s&ab_channel=W.W.NortonSupport
- Use your UAlbany email and NetID to create your account.
- The Ebook with InQuizitive is $75, or just get InQuizitive for $30 if you have the 4th edition textbook. You will need to get the InQuizitive feature because the assignments are part of your grade.

Here are the campus bookstore ISBNs for the textbook or e-book options:



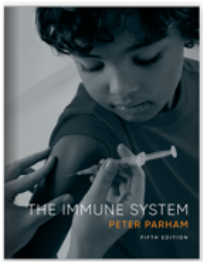
REQUIRED

Immune System - With Access Card

By Parham, Peter
Edition: 5TH 21
Publisher: NORTON
ISBN 13: 9780393533354

Print
$190.67 New Print
ADD TO CART

This is the print book plus E-book and online content (Inquizitive etc.)



Recommended

Immune Systems - Access Card

By Parham, Peter
Edition: 5TH 21
Publisher: NORTON
ISBN 13: 9780393533330

Print
$100.00 New Print
ADD TO CART

This is the E-book and online content (Inquizitive etc.) ONLY, no print book

iClicker2: The clicker is required and will be used at every class for attendance and participation. You can purchase a new or used clicker at the campus bookstore (ISBN: 9781498603041) or through online retailers. Make sure to purchase the iClicker2, since earlier versions are not supported. If you buy a used clicker, please be sure to follow the re-set directions before you register it on Blackboard at the start of classes.

REQUIRED

iClicker2 Student Remote Rev.

By Iclicker
Edition: 17
Publisher: MAC HIGHER
ISBN 13: 9781498603041

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Blackboard, Zoom and Technology Requirements: The instructional mode for this course is in-person but is designed to pivot to online instruction if required.

All classes, course resources, assignments and announcements will be available through Blackboard (Bb) so please familiarize yourself with the Bb course set up at the start of the semester to be sure that you can access all materials and assignments https://blackboard.albany.edu. Use the table of contents feature to navigate within module folders.

Download the UAlbany Zoom: albany.zoom.us. When signing in, always use your UAlbany single-sign-on (**SSO**) credentials: **NetID and password**. By using your UAlbany SSO, you will bypass the waiting room and immediately enter the meeting.

When logging into a Bio335 Zoom meeting (for office hours, or synchronous class meetings if UAlbany needs to pivot to remote instruction because of COVID-19), first log into the Bio335 Blackboard course site, then click on the Zoom link in the upper left navigation panel.

To avoid technical issues that may interfere with completion or submission of your assignments, I recommend that you work on a **computer or laptop** rather than a mobile phone or tablet. Please identify your technology needs *before the start* of the semester. If you do not have the required access or technology, you may apply for assistance via:

- https://www.albany.edu/covid-19/teaching-learning/resources-students
- https://www.albany.edu/studentaffairs/emergencyfund.shtml
- https://www.albany.edu/covid-19/cares-act-grants

VPN Set-up for Remote Access to Campus Network: The University at Albany provides remote access service via a Virtual Private Network (VPN) for faculty, staff, and students. When connected to the VPN, information is securely transmitted to the campus network. This service allows faculty, staff, and students to access University resources from off-campus connections.
https://wiki.albany.edu/display/public/askit/VPN+GlobalProtect+Service

Announcements: will be made frequently and are posted on Blackboard. They are automatically emailed to you via your UAlbany email. Please check your UAlbany email frequently so that you will be aware of any changes or new course information. **You are responsible for being aware of current information and deadlines that have been posted on Blackboard.** I will always try to give as much notice as possible for any changes.

Please carefully read and refer to the UAlbany Preparing for Spring 2022 Documents:
https://www.albany.edu/covid-19/health-safety/spring-2022-arrival

Course Objectives: After completing this course, students will be able to describe and explain the:

- development, structure and function of the cells and tissues of the immune system
- features and functions of the innate and adaptive immune responses in health and disease
- structure and function of antibody molecules and other immune effector molecules
- vaccine development and public health issues related to vaccination

- reactions between antigens and antibodies
- cellular interactions in the immune response
- consequences of the immune response in allergic reactions, transplantation rejection, and autoimmune diseases
- immune responses to viral infections
- immunotherapy

How You Will Be Evaluated: The course is based on 1000 points total, and a student's final grade is determined as follows:

Item	**Total points = 1000**
Chapter Homework:	200 points (16 @ 10 points each, drop lowest two scores)
InQuizitive Homework:	200 points (16 @ 10 points each, drop the lowest two scores)
Module Quizzes:	500 points (6 @ 100 points each, drop the lowest score)
Participation:	100 points (28 classes, 4 points per class attended, drop three absences, or get those points as extra credit for attendance)

Overview of Course Activities and Expectations:

1. Active Learning: Students in the Immunology class should be prepared to be active learners. All resources (lectures and links) required for completing your assignments and quizzes are posted on Bb. You are expected to attend class, work through the topics and assignments of module and submit assignments by the due dates. I encourage you to seek help when you need it for any reason. Ask questions during office hours with me or meet with a tutor.

2. Assigned Reading: The assigned readings are from the textbook chapters. Students are expected to have read the textbook chapter thoroughly in advance of attending lecture and completing the assignments. Students who do not read the textbook or focus closely on the figures in each chapter, are generally less successful in this course. Most reading should occur during the first week of the module, so that you have the necessary knowledge to begin the assignments that are due at the end of the module. Any assigned materials that are not from the textbook will be provide on Blackboard as links or pdf files.

3. Assignments: The following will be assigned on the first Tuesday of each module and be due on the last Tuesday of the module (modules average about 6 classes, or three weeks each). Late assignments will have a 25% deduction for 1 – 7 days late, and no credit will be given after 7 days. Extensions for completing assignments will only be considered if a student provides valid documentation for why the assignment could not be completed by the due date (illness or emergency – see policy below). Since you have 3 weeks to work through the material of each module, it is important for you to develop a work schedule for your assignments so that you are not completing them all on the due date. This is inevitably when technical issues or other emergencies come up, so it's best not to leave things until the last minute.

a. Chapter Homework (200 points): There are 16 chapter review worksheets (with accompanying chapter assessment questions on Bb) worth 10 points each, based on material covered in lecture. Students get **three** attempts at completing these questions, and the highest score is counted. The lowest two chapter homework scores will be dropped, or you can just complete 14 of these.

b. InQuizitive (200 points): For every chapter, there is an InQuizitive assignment (16 total @ 10 points each).

The lowest two scores will be dropped, or you can just complete 14 of these. Please be sure to activate your InQuizitive account and familiarize yourself with how to use this system.

c. Module content assessment quizzes (500 points): For every module, a 20-question multiple-choice quiz will be given online on Blackboard. The questions will be on the topics that were covered in the lectures (about 5 questions per chapter). There are five module quizzes @ 100 points each. Quizzes will be available from 3:00 pm Thu until 11:59 pm Fri, and you will have 90 minutes to complete the quiz once you start it. The quiz questions are drawn from a question pool, so each student will get different questions. For each question, you must submit your answer before going on to the next question, and you cannot return to a previously submitted question. Students have two attempts to take the quiz and the higher score will be counted.

An optional sixth quiz will be given online during finals (on May 10) and can be taken by students who wish to have one of the previous five quizzes dropped (the lowest score quiz). Students who are happy with their first five quizzes do not need to take the sixth quiz. Quiz 6 will be cumulative and can contain material from any chapter covered during the semester. A focus topic study guide will be posted.

Late quizzes submitted after the duedate will be graded with a late penalty (25% off for 1 – 7 days late, 0% credit after 7 days) unless the student has a documented reason for their absence or inability to complete the assignment BY THE DUEDATE and has communicated with the instructor to request an extension as detailed in the absence policy above. Please DO NOT ASK for an extension unless you have documentation for your absence/inability to complete your work.

d. Participation (100 points): Students earn 4 points for every class attended up to 25 classes, with three allowed absences (students attending more than 25 classes can earn those points as extra credit.) Participation and attendance during class will be assessed through 1) clicker responses or 2) completion of participation assignments on Blackboard. If you miss a synchronous-online or in-person class for ANY reason, you can still earn participation points by completing the online participation assignment posted on Blackboard. There are multiple participation assignments per module, so you can complete one for each class you miss. Students cannot receive credit for more than 28 attendances, so the maximum number of earnable participation points is 112.

4. Absence policy: Students are expected to attend class (online-synchronous or in-person) and submit assignments by the due date.

a. If you are absent from class for ANY reason, make up the participation points by completing a participation assignment on Blackboard for each class you miss (due dates for these will be indicated). You do not need to email me or provide documentation for your absence, and it is your responsibility to keep up with the material covered in class.

b. If you are absent from class during the 24 hour period before a homework or quiz is due and are unable to submit the work on time, you can request an extension for completing the assignment by doing the following:
1) obtain absence documentation that includes a date range that covers the 24 hours before the due date: (doctor's note for personal or family illness or emergency, absence for religious observance, court date, surgery date, military training orders, athletic events, etc.) You may block out any private information or test results in these documents – I am only interested in the dates.
2) complete the Absence Accommodation Request Form: download from Blackboard Course Information folder; include a list of assignments missed, your return to classes date, and the new date that assignments are to be submitted (within one week of your return to classes)
3) email the form and documentation to the instructor preferably **before or on** the assignment or quiz due date.

Submit the missed assignment or quiz within one week of your stated return to classes date. Failure do so within the time extension period will result in a grade of zero for the assignment in question, and there will be no

further option to earn credit for that assignment. Accommodation requests submitted more than one week after the initial due date of the assignment or quiz will NOT be considered.

c. What if you don't have documentation for your absence? Since students are allowed to drop their lowest case study grade, the lowest interactive media grade, and the lowest quiz grade, extension requests for assignments and quizzes will *only* be considered for valid documentable reasons as stated in (b) above. Please do not ask for an extension to complete an assignment or quiz unless you have a documentable reason and fill out the form.

If your emergency (illness, mental health difficulties, family, or housing issues, etc.) is likely to result in intermittent or extended absence from class (more than one week), it is important that you communicate with me promptly and attempt to obtain documentation. For absences of more than one week, please also inform the Office of Undergraduate Education (LC30) to discuss your situation and determine what resources are available to assist you: https://www.albany.edu/undergraduateeducation/ They will send out an email to all your professors to let them know your absence dates. Do not wait until the end of the semester to tell me or the OUE about a problem that has been going on all semester, since your options at that point will be limited.

Work conflicts: Extensions will not be granted for work schedule conflicts.

Technology issues: If you experience a technology issue or loss of power/internet that results in your inability to submit an assignment on time, the outage must be documented via screenshot, time-stamped and sent to me via email BEFORE the due date has passed. If the issue is access to MyUAlbany or Bb, contact the ITS helpdesk to open a ticket: https://www.albany.edu/its/service-desk.php. Please plan ahead and do not wait until the last evening to complete your work. Neither the ITS Dept. nor I will be available to help you after hours. If the service interruption is university-wide, the due date will be extended to compensate for the outage.

Grading Policy: The cut-offs for the letter grades, and assignment of final grades at the end of the semester will be as follows:

Number of Points Earned out of 1000	Letter Grade	Percentage (%)
> 930	A	>93.0
900-929	A-	90.0-92.9
870-899	B+	87.0-89.9
830-869	B	83.0-86.9
800-829	B-	80.0-82.9
770-799	C+	77.0-79.9
730-769	C	73.0-76.9
700-729	C-	70.0-72.9
670-699	D+	67.0-69.9
640-669	D	64.0-66.9
600-639	D-	60.0-63.9
<599	E	<59.9

Letter grades will be assigned based on the number of points a student earns throughout the semester – NOT the percentage. For example, 925 points does not round to 93%. Grades will be rounded to the nearest tenth of a point (earned points, not percentages), so 0.5 -0.9 points will be rounded up to the next point, and 0.1-0.4 will be rounded down to the nearest point. An A is assigned only to students earning at least 929.5 points. Students are expected to check their posted grades regularly and should not be surprised about their final grade in Bio335. Anyone with a question or concern about their grade is encouraged to attend office hours to discuss their concerns with Dr. Mayerhofer early and often throughout the semester. No additional assignments or bonus points will be given to students on an individualized basis. This would not be fair to

other students. **PLEASE DO NOT ASK.**

a. Letter grades will be assigned based on the **number of points** a student earns throughout the semester – NOT the percentage. For example, 925 points does not round to 93%. Grades will be rounded to the nearest tenth of a point (earned points, not percentages), so 0.5 -0.9 points will be rounded up to the next point, and 0.1-0.4 will be rounded down to the nearest point. An A is assigned only to students earning at least 929.5 points. Students are expected to check their posted grades regularly and should not be surprised about their final grade in Bio335. A grade calculator spreadsheet will be posted so students can calculate their grade at any time during the semester. Anyone with a question or concern about their grade is encouraged to attend office hours to discuss their concerns with Dr. Mayerhofer early and often throughout the semester. **No additional assignments or bonus points will be given to students on an individualized basis. This would not be fair to other students. No exceptions. PLEASE DO NOT ASK.**

b. Grade question deadline: Any discrepancies in the grades posted on Blackboard must be brought to the attention of the instructor no more than one week after the grade has been posted. All questions about grades must be submitted in writing (email is fine), and must include the student's name, student ID number, class number, and must indicate the assignment/ exam for which the question is being submitted, along with evidence that the grade was incorrectly recorded in the gradebook, and/or that there is an error in the homework or answer key. A student who sends me an email saying *"There is a problem with #5 because it marked my answer wrong, but I got it right"* should not expect me to search through their quiz to figure out what they meant. You will get the speediest resolution to your concern if you provide me with all the required details right away!

c. NOTE: The last day to drop Bio 335 without receiving a "W" is Friday February 4. The last day to withdraw with a "W" or to select the S/U grading option is Thursday April 7. If you miss the drop deadline and stop participating in the course, you still get an A-E letter grade (probably an E). If you miss the withdrawal date, but have extenuating circumstances that prevent you from completing your course work, you may submit a petition to the Office of Undergraduate Education for late withdrawal from the course: https://albany.jotform.com/92195576911163

a. **d. Grade Calculator:** An EXCEL document containing a full grade calculator can be found under course materials on Blackboard. Open the Excel sheet and save it locally. The grade calculator can be used to determine current standing at any time during the semester, as well as for final grade calculation. Please fill out this calculator and review it before asking to speak to the professor about your standing in this course. You should not be surprised by your grade in this course at any time. NOTE: Blackboard does not calculate your grade, it only records your earned points. Always use the grade calculator to determine your current grade in the class.

How to contact your professor:

- **Linda Mayerhofer's Office Hours:** Virtual for the first two weeks of classes: Mon/Wed 11:00 am – 12:30 pm and Tue/Thu 2 – 4 pm in person (Bio108). Access and join the Zoom office hours meeting via Zoom on Blackboard in the Course Information folder. The link will remain the same throughout the semester.
- **Email:** To expedite email correspondence to Dr. Mayerhofer (lmayerhofer@albany.edu) or Alex Lemus (alemus@albany.edu), please observe the following rules:
  - Use your **UAlbany email address** for all correspondence; other sources may be filtered out. It is also a violation of FERPA for me to discuss course/grade information with you unless it is through your UAlbany email address.
  - Always include your **full name and Student ID**.
  - **Include "Bio335" in the subject line. I teach three different classes in the spring, and so it is important to identify the class you are emailing about.**

- Due to the high volume of emails I receive, you may expect a reply within two to four business days. If you don't receive a reply after four days, please resend the email.
- Please address me as Dr. Mayerhofer.
- If the email is of high urgency, then label the email as **URGENT**.
- Please note that you **do not need to email me about your absence from class** unless you are missing an assignment due date and are requesting an extension or make-up. In that case, submit an Absence Accommodation Request form. Otherwise, just complete a participation make-up assignment for each day you miss.
- All email announcements sent by the instructor will be to your **UAlbany email address**.
- It is your responsibility to check this email regularly.
- *Please keep in mind that you will not get an immediate response to your email.* Email responses should not be expected over the weekend, or after 9 pm on weekdays.
- Do not reply to emails that are sent out to the whole class – these are from a "Do Not Reply" email address. Make sure that you are sending email to lmayerhofer@albany.edu

Academic Success and Support:

General Biology I and II both cover a very large amount of content relatively quickly and students who struggle but do not actively seek help, will quickly fall behind. I enthusiastically encourage you to email me for help with any material that you are not comfortable with!

One of the most important skills you can develop is to learn to **advocate for yourself.** If you are struggling with the course material or are encountering obstacles that are preventing you from focusing on your studies, it is critical for your success to take action **right away** (don't wait until the end of the semester) and contact one or more of these student resources that are available to you. Consider the following options:

- **Visit during my office hours:** First two weeks of class by Zoom: Mon/Wed 11:00 am – 12:30 pm and Tue/Thu 2 – 4 pm, and thereafter in person (Bio108) or other times by appointment via Zoom (schedule via email).
- **Advising Plus Tutoring:** Sign up through UAlbany Advantage Success Center. Schedule and tutor availability TBA: https://www.albany.edu/ascplus/ In addition, online tutoring is available with NetTutor. Log into your Bb course home page and click on NetTutor in the Student Resources menu.
- **Other steps you can take to help you improve your grade:**
  - Go to every class, and actively take notes and ask questions. Taking notes by hand has been shown to increase retention of the information. Print out the lecture slides before class, and jot down your notes right on the slides.
  - Step up your studying time and strategy. Set up a study plan schedule and quiz prep checklist. Review the recommended study methods posted on Blackboard.
  - Study the chapter slides and watch the greenbox review videos (links are in the slides).
  - Read the textbook (but don't take extensive notes from the book, because there is way too much detail. Focus on the information that was covered in the class.)
  - Do the end of chapter questions.
  - Plan to dedicate 17-20 hours of study time each week for this class. This amount is based on surveys of previous Bio335 students who were successful in the course.
  -

Reasonable Accommodation Policy:

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning, and psychiatric disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Resource Center. That office will provide the course instructor with verification of your disability and will recommend appropriate accommodations. *Please notify Dr. Mayerhofer if you are registered with the DRC as soon after the start of the semester as possible so that*

specific arrangements can be made for completing assignments. Please email me your accommodation letter.

Academic Dishonesty:
Know and understand the course policies on cheating and plagiarism. The University expects you to be familiar with the standards of academic integrity. The university's academic integrity policies can be found at: http://www.albany.edu/undergraduate_bulletin/regulations.html.
Please review these carefully so that you do not inadvertently violate the academic integrity standards that all scholars are bound to adhere to. This is especially important during the current times, when students are completing assessments online, and being asked to follow the honor system.

Homework assignments in this course are open book, so you can use your textbook, notes, lecture slides, reading assignments and the internet. I also encourage collaboration between students. If you need help, you can go to the IBASS tutoring center. If you post answers to assignment questions in a chat box or other forum that is accessed by other students in the class or see these answers and use them in your own work, you are guilty of CHEATING and academic dishonesty. The only person this hurts in the long run is you, even if you don't see it that way in the moment. Students who are found to have cheated on their assignments will get a zero for that assignment. Repeated instances of cheating will result in failure of the course and referral to the university's judicial system.

Quizzes given in class are closed book. Students are expected to adhere to academic integrity standards and cheating will not be tolerated. Students who are found to have cheated on their assignments will get a zero for that assignment. Repeated instances of cheating will result in failure of the course and referral to the university's judicial system.

Academic Grievance Policy:
A student who seeks to dispute a grade or evaluation must initially pursue the matter directly with the faculty member involved. If not satisfactorily resolved directly with the faculty member, a written grievance may be filed with the program/department, or directly with school/college for units that are not departmentalized. Please refer to the undergraduate bulletin for further details on this procedure:
https://www.albany.edu/undergraduate_bulletin/regulations.html

Campus and Workplace Violence Prevention Policy and Program: UAlbany is committed to providing a safe learning and work environment for the University's community. The University will respond promptly to threats, acts of violence and acts of aggression by employees, students and/or members of the public against employees and members of the campus community. Please refer to this policy for information about prohibited conduct, personal safety and reporting procedures for violations:
https://www.albany.edu/hr/assets/Campus_Violence_Prevention.pdf

Allegations of Unlawful Discrimination and Sexual Harassment Policy and Procedures for Complaints:
The University at Albany ("University") is committed to fostering a diverse community of outstanding faculty, staff, and students, as well as ensuring equal educational opportunity, employment, and access to services, programs, and activities, without regard to an individual's race, color, national origin, religion, creed, age, disability, sex, gender identity, gender expression, sexual orientation, familial status, pregnancy, predisposing genetic characteristics, military status, domestic violence victim status, or criminal conviction. Employees, students, applicants or other members of the University community (including but not limited to vendors, visitors, and guests) may not be subjected to harassment that is prohibited by law, or treated adversely or retaliated against based upon a protected characteristic. https://www.albany.edu/general-counsel/assets/Sexual_Harassment_Policy_and_Procedures_Revised_6-20014.pdf

Student Emergency Assistance: The Coronavirus Aid, Relief, and Economic Security (**CARES**) Act is a federal effort that includes provisions designed to deliver emergency assistance to students and higher ed. institutions impacted by the coronavirus. Institutions must use at least 50% of the funds received under the

CARES Act to provide emergency financial aid grants to students for expenses related to the disruption of campus operations due to coronavirus. Eligible expenses include food, housing, course materials, technology, health care and childcare: https://www.albany.edu/covid-19/cares-act-grants

Your Psychological Health During COVID-19: It is normal to experience some psychological distress and a range of emotional reactions to an evolving global health situation, such as COVID-19. Some signs of distress may include:

- Difficulty concentrating
- Increased fear, anxiety, worry, or feeling paralyzed or overwhelmed
- Trouble sleeping
- Changes in appetite or eating habits
- Increase in alcohol or other drug use, and/or concerns about your use by friends or family
- Crying, sadness, loss of interest/pleasure
- Feeling hopeless and/or helpless

If your distress is interfering with your relationships, academic, work, or daily life, confidential support is available to you. Contact Counseling and Psychological Services (CAPS) at 518-442-5800 or consultation@albany.edu to schedule an appointment with a psychologist. Virtual counseling services are available. The CAPS website also contains self-help resources and other valuable information.

For extenuating circumstances that are preventing you from focusing on your studies or attending class (personal, family, or medical emergency): Sometimes school can become overwhelming, especially if there are extenuating circumstances (personal, medical, family, financial). Do not wait until the end of the semester to seek help. **Contact me as soon as possible**, so that I can work with you to develop a plan to complete your work. Do not wait until the end of the semester to contact me about the situation, since your options will be limited. I do not generally give incomplete grades except if the student has only one or two assignments or quizzes to make up and has provided documentation for their absence. If you find that you have missed the majority of the work in the class, it is best that you withdraw by the deadline (**April 4**) or petition the Office of Undergraduate Education for a late withdrawal from the course: https://albany.jotform.com/92195576911163

Use the resources listed below. That is why we are here!

- Contact the Dean of Undergraduate Education (LC30) to discuss your situation and determine what resources are available to assist you: https://www.albany.edu/undergraduateeducation/
- Contact Student Emergency Services for assistance with funds to help you be able to complete your studies if an unforeseen emergency situation or financial hardship arises that is preventing you from completing your work: https://www.albany.edu/studentaffairs/emergencyfund.shtml
- Make an email appointment to discuss the situation with your academic advisor. You may need to consider dropping another course, or even dropping Bio335 this semester.
- Visit the Student Care Service (518) 442-5501 https://www.albany.edu/ualbanycares/
- Visit the Counseling Center (518-442-5800) https://www.albany.edu/counseling_center/
- Visit the Disability Resource Center (518-442-5400) https://www.albany.edu/disability/index.shtml
- going orward to be academically successful.
- Visit the Student Care Service (518) 442-5501 https://www.albany.edu/ualbanycares/
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- Visit the Disability Resource Center (518-442-5400) https://www.albany.edu/disability/index.shtml

Course Description:
The structure and function of the antibody molecule and of reactions between antigen and antibody. Also covers cellular interactions in the immune response as well as both the beneficial and harmful consequences of the response. Prerequisite(s): A BIO 212Y. Prerequisite(s) or corequisite(s): A BIO 365.

Bio335 Spring 2022 – Lecture and Assignment Schedule*

Module	Lecture Topics	Assignments and Due Dates:
Module 1: *Classes will be held remotely by Zoom for the first two weeks: 1/25, 1/27, 2/1 and 2/3*	Chapter 1 – Elements of the Immune System Chapter 2 - Innate Immunity – Immediate Response Chapter 3 - Innate Immunity – Induced Response	Textbook Reading: Chapters 1, 2 and 3 Module 1 Assignments due: **Tue 2/8** • Homework 1-3 • InQuizitive Assignments Module Quiz 1 (Ch 1 – 3): **Thu 2/10** **Remote classes: 1/25, 1/27, 2/1 and 2/3**
Module 2:	Chapter 4 - Antibody Structure and B-Cell Diversity Chapter 5 - Antigen Recognition by T Lymphocytes Chapter 6 - The Development of B Lymphocytes	Textbook Reading: Chapters 4, 5 and 6 Module 2 Assignments due: **Tue 3/1** • Homework 4-6 • InQuizitive Assignments Module Quiz 2 (Ch 4-6): **Thu 3/3**
Module 3: *Tue 3/15 and Thu 3/17: No Class – Spring Break*	Chapter 7 – The Development of T Lymphocytes Chapter 8 - T Cell-Mediated Immunity Chapter 9 - B Cell and Antibody-Mediated Immunity	Textbook Reading: Chapters 7, 8 and 9 Module 3 Assignments due: **Tue 3/29** • Homework 7-9 • InQuizitive Assignments Module Quiz 3 (Ch 7-9): **Thu 3/31**
Module 4:	Chapter 10 - Preventing Infection at Mucosal Surfaces Chapter 11 – Immunological Memory and Vaccination Chapter 13 – Failure of the Body's Defenses	Textbook Reading: Chapters 10, 11 and 13 Module 4 Assignments due: **Tue 4/19** • Homework 10,11,13 • InQuizitive Assignments Module Quiz 4 (Ch 10,11,13): **Thu 4/21**
Module 5:	Chapter 14 - IgE-Mediated Immunity and Allergies Chapter 15 - Transplantation of Tissues and Organs Chapter 16 – Disruption of Healthy Tissue Chapter 17 – Immunotherapy	Textbook Reading: Chapters 14 – 16 and 17 Module 5 Assignments due: **Tue 5/3** • Homework 14-16 • InQuizitive Assignments Module Quiz 5 (Ch 14-16): **Mon 5/9 Online**

*Assignments and due dates can be amended by the instructor at any time. Changes will be posted as announcements on Blackboard which are also emailed to students. Version 1-19-22

The instructional mode for this course is In-Person but for **the first two weeks (January 25 – Feb 3) class will be held remotely via Zoom at the scheduled class time.** Join the Zoom meeting by clicking on the link in the Bio117 Blackboard course site. Use your single sign-on (SSO) credentials (your UAlbany NetID and password) to log in.

The course can also pivot to online in response to UAlbany COVID-19 guidelines. Students are expected to follow all university regulations with respect to COVID-19 health and safety protocols: https://www.albany.edu/covid-19

ABIO 336 IMMUNOLOGY LABORATORY **Fall Syllabus**

Course number: ABIO 336
Credit Hours: 2
Instructor: Dr. Don Orokos
Office: Biology 112
Phone: 442-4308
E-mail: dorokos@albany.edu
Office Hours: Tuesday and Thursday 9:00am to 10:00am or email for an appointment
Schedule

Prerequisite(s): A BIO 201 and 202Z. Prerequisite(s) or corequisite(s): A BIO 335.

Spring 2023
Monday and Wednesday 1:10pm to 5:10pm and Tuesday and Thursday Section: 1:30pm to 5:30pm in Biology Room B-23

	Date	Laboratory Exercise	Assignment(s) Due
1.	1/23-1/26	1. Add / Drop - Calculations Worksheet	
2.	1/30 - 2/2	2. Proper Micropipette Usage and Uncertainty Measurement	Calculations Worksheet
2.	2/6 - 2/9	2. Organs, Tissues, and Cells Of the Immune System	
3.	2/13 - 2/16	3. T-Cell Receptor	
4.	2/20 - 2/23	4. Agglutination	Statistical Analysis I Cell Count Take Home Quiz
5.	2/27 -3/2	5. Purification of IgG from Serum	
6.	3/6 - 3/9	6. **Exam I**	BSA Standard Curve Take Home Quiz
7.	3/13 - 3/16	7. **Classes Suspended (Spring Break)**	
8.	3/20 – 3/23	8. SDS Electrophoresis	
9.	3/27 – 3/30	9. Western Blot / Coat ELISA plates	MW Standard Curve Take Home Quiz.

10.	4/3 - 4/6	10. ELISA	
11.	4/10 - 4/13	11. Precipitation Reaction -Immunodiffusion	ELISA Take Home Quiz
12.	4/17 - 4/20	12. **Exam II**	

ABIO 336 Immunology Laboratory (2 credits)

Contact Information:

Instructor: Dr. Donald Orokos
Office: Biology 112
Phone: 442-4308
E-mail: dorokos@albany.edu
Office Hours: Tuesday and Thursday 9:00am to 10:00am or email for an appointment.

TA:
Monday Section:
Office Hours: or by appointment.
Location:
E-mail:

Course Description: Modern laboratory techniques will be performed to study the cellular and humoral components of the immune system; immune cells and cell markers, immunoglobulin purification and characterization, antibody and antigen identification assays including immunodiffusion and immunoelectrophoresis, and enzyme-based immunoassays (ELISA). One laboratory per week.
Prerequisite or co-requisite: A Bio 335.

Learning Objectives:

1. To have a better understanding of the immunology concepts and theories emphasized in ABIO 336
2. To gain a critical understanding of various applications of immunology techniques.
3. To develop a number of key immunology laboratory skills.

Laboratory Protocol: All students in ABIO 336 will complete a weekly 20 minute in-person laboratory Quiz followed by a 30-40-minute PowerPoint presentation and a three-hour hands-on laboratory component.

1. Safety Precautions
    a. Students, Instructor and TA entering Biology B-23's bench area must be wearing the following PPE:
        i. Lab Coat (required-own personal lab coat)
        ii. Non-Disposable Safety Glasses (required-own personal safety glasses)
        iii. Mask (required- own personal mask)
        iv. Disposable Gloves (required-provided in B-23)
    b. All disposable PPE (i.e., gloves) will be disposed in designated Biohazard Trash Container.
    c. All must use hand sanitizer before and after each lab.

2. "At the Bench"
    a. Students will be working in group of two during the required 4-hour practical component and perform and/or adhere to the following:

i. Except for the laboratory protocol, students are not allowed to bring any personal items to the Bench Station area. All personal items will be stored in an assigned cubby.
ii. Each of the eight Bench Stations will have the following items:
    1. A copy of the laboratory protocol plus all required equipment, consumables, slides, buffers, and reagents to perform each laboratory experiment/exercise.
iii. Students will disinfect their designated bench area before and after each 4-hour laboratory period with 10% Bleach followed by 70% Alcohol.
iv. Each student will also sanitize before and after each 4-hour practical component all equipment, reagent bottles, etc. with 70% Alcohol.

3. ABIO 336 "Pivot Plan"
    a. This Pivot Plan will be initiated only after the University at Albany deems that all in-person courses must now be delivered totally on-line. In-person instruction delivery will resume only after approval from UAlbany Administration.

Weekly Quiz:
All students registered for ABIO 336 will be required to take a weekly in-person quiz. Each quiz will be given the first 15 minutes of the class period. Information on the quiz will include information and material from current and past (i.e., laboratory exercise, required reading(s), and PowerPoint presentation) labs. Nine quizzes will be given throughout the semester, whereas eight quizzes will count towards your final grade. There will be no make-up quizzes because each student will be allowed to drop **one** quiz for ABIO 336 during the Spring 2022 semester. Some of the weekly quizzes will have a take-home component. In those cases, each student must submit a hardcopy of the take-home part of that week's quiz at the beginning of the laboratory period—no exceptions--a zero grade will be assigned on the take-home part of the weekly quiz if not turned in on time.

Calculations Worksheet:
Part of your final grade for this Immunology Laboratory course is to complete a Calculations Worksheet. For the Calculation Worksheet assignment to be graded, each student must submit a hardcopy copy of which must be submitted no later than 6pm the day that the assignment is due. Those assignments not submitted on time will result in **10% OFF EACH DAY LATE** whereas assignments that are 7 days late will not be graded and a final grade of a zero will be assigned for that 7-day late assignment.

Notebook:
All students enrolled in ABIO 336 must maintain a notebook throughout the Spring 2022 semester. The content in the three ringed binder should be written in ink and contain the following sections: Title, Purpose, Background, Methodology, Materials, Results and Conclusion. Each notebook should have enough detail so that someone else is able to read and understand what, why and how the experiment(s) were performed followed by final data and a conclusion. At the beginning of lab, Dr. Orokos and your TA will review all notebooks noting the required Pre-Experimental and Post-Experimental information with a final numerical score being assigned to the weekly quiz grade.

Lab Performance: All students in ABIO 336 will also receive a weekly grade based on overall conduct and bench skills during the in-person laboratory component of ABIO 336. This Lab Performance Grade is all or none and each student must satisfy all the goals below to earn a point each week.

- Arrive to lab on time.
- Act professionally and respectfully towards fellow ABIO 336 classmates, teaching assistant, and instructor.
- Perform all lab techniques and equipment properly and safely and follow all instructions and revisions/changes.
- Pickup/straighten up all equipment and consumables at your assigned workstation.

Attendance:
Mandatory. If you can't get to class, let me know in advance by e-mailing me at dorokos@albany.edu. In addition, you must bring your written excuse to Dr. Orokos (Biology 112) for administrative approval for missing the lab. Undefined absences on your part will result in a failing grade for all assignments that

week. You are also expected to stay until the laboratory period is complete. Do not schedule doctor appointments, work, interviews, etc. for a time that will interfere with lab. A class withdrawal from ABIO 336 is strongly recommended for those students who have missed two or more laboratory periods.

Absence Due to Religious Observance:
Instructors must explicitly refer to New York State Education Law (Section 224-A) whereby campuses are required to excuse, without penalty, individual students absent because of religious beliefs, and to provide equivalent opportunities for make-up examinations, study, or work requirements missed because of such absences. Faculty should work directly with students to accommodate religious observances. Students should notify the instructor of record in a timely manner.

Academic Integrity:

See Undergraduate Bulletin for details. Deviations will be treated according to university regulations. "Claims of ignorance, unintentional error, or personal or academic pressures are not sufficient reasons for violations of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly." (University's *Standards of Academic Integrity Policy*).

Penalties and Procedures for Violations of Academic Integrity
The course instructor is responsible for determining when a student has violated academic integrity in a course…. When a faculty member determines that a student has violated academic integrity, he or she will inform the student and impose an appropriate sanction. Faculty members must respond in a manner most appropriate to the particular infraction and the circumstances of the case in question, according to his or her best judgment. **Penalties for violations of academic integrity may include, but are not limited to, the following:**

1. Warning without further penalty, or with a requirement that an assignment be redone without a breach of academic integrity and resubmitted
2. Lowering of an assignment/exam grade
3. Assigning a failing grade on a paper containing plagiarized material
4. Assigning a failing grade on any examination in which cheating occurred
5. Lowering a course grade
6. Giving a failing grade in a course or other academic exercise

In addition, faculty members encountering a violation of academic integrity in their courses are required to complete and file the Violation of Academic Integrity Report. The report should indicate the sanction imposed and a brief description of the incident. Faculty filing a VAIR will submit copies both to the Vice Provost for Undergraduate Education or Graduate Education, as appropriate, and to the student. If a faculty member informs the student that he or she will receive a failing grade for the course as a whole or for a component of the course as a result of academic dishonesty, the student receiving such a penalty will not be permitted to withdraw from the course, or to change the grading basis of the course from A-E to S/U. Students who feel they have been erroneously penalized for an academic integrity infraction, or who think that a penalty is inappropriate, may make use of the grievance procedures, beginning with the Department and the College/School where the course was offered. Each College/School of the University has procedures for students who seek to dispute grades assigned or penalties imposed for academic infractions. Copies of the procedures are maintained in the College/School Deans' Offices or on their respective websites.

VAIR for Undergraduate Studies:
https://www.albany.edu/undergraduateeducation/files/Violation_of_Academic_Integrity_Report.docx

Possible Points: Based on the following:

Exam I & II (23 points each x 2 Exams)	46
Lab Performance (1 points per 9 labs)	9
Calculations Worksheet (5 points x 1 Worksheet)	5
Weekly Quiz (9 total, 5 points x 8 Quizzes)	40
TOTAL POINTS	100

Letter Grade: ABIO 336 Immunology Laboratory course will include the following letter grades: A, A-, B+, B, B-, C+, C, C-, D+, D, D-, E. Each student's final letter grade for this course will be based on the total number of points earned throughout the semester. Final (+/-) grades will be determined only after final grades have been submitted for the two sections of ABIO 336.

1. A Range=90 points or more
2. B Range =80 to 89 points
3. C Range =70 to 79 points
4. D Range =60 to 69 points
5. E Range =59 points or less

Lab Fee:
$100 lab fee is included in your tuition bill. If your tuition is not paid, a hold will be placed on your records.

Textbooks:
1). Handouts for this course will be posted on Blackboard. Each student in ABIO 336 is required to bring a hardcopy/electronic copy of the weekly laboratory protocol to the 4-hour in-person component. (required)
2). Undergraduate Immunology textbook. (Strongly recommended)
3). A Laptop with Microsoft Excel (Recommended)

Laboratory Attire:
All Immunology students registered in ABIO 336 must always wear in Biology B-23 a lab coat, appropriate eye protection and gloves. The lab coat and eye protection items can be purchased at the Chemistry Store. The Biology Department will provide disposable gloves will be available in B-23. Failure to bring these required PPE items will prevent you from entering Biology B-23. Eating and drinking are prohibited in B-23.

Title IX Information:
Title IX of the Education Amendments of 1972 is a federal civil rights law that prohibits discrimination based on sex in federally funded education programs and activities.

The SUNY-wide Sexual Violence Prevention and Response Policies prohibit offenses defined as sexual harassment, sexual assault, intimate partner violence (dating or domestic violence), sexual exploitation, and stalking. The SUNY-wide Sexual Violence Prevention and Response Policies apply to the entire University at Albany community, including students, faculty, and staff of all gender identities. The University at Albany provides a variety of resources for support and advocacy to assist individuals who have experienced sexual offenses.

Confidential support and guidance can be found through the Counseling Center (518-442-5800, https://www.albany.edu/counseling_center/), the University Health Center (518-442-5454, https://www.albany.edu/health_center/), and the Interfaith Center (518-489-8573, https://www.albany.edu/spirituality/onCampus.shtml). Individuals at these locations will not report crimes to law enforcement or university officials without permission, except in extreme circumstances, such as a health and/or safety emergency. Additionally, the Advocates at the University at Albany's Advocacy Center for Sexual Violence are available to assist students without sharing information that could identify them (518-442-CARE, https://www.albany.edu/advocacycenter/).
Sexual offenses can be reported non-confidentially to the Title IX Coordinator within The Office for Equity and Compliance (518-442-3800, https://www.albany.edu/equity-compliance/, Building 25, Room 117) and/or the University Police Department (518-442-3131, http://police.albany.edu/).

Please note, faculty members are considered "responsible employees" at the University at Albany, meaning that they are required to report all known relevant details about a complaint of sexual violence to the University's Title IX Coordinator, including names of anyone involved or present, date, time, and location.

*********In case of an emergency, please call 911*********

Mental Health Information:
As a student there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. The University at Albany Counseling and Psychological Services (CAPS) provides free, confidential services including individual and group psychological counseling and evaluation for emotional, social, and academic concerns. Students may consult with CAPS staff remotely by telephone, email or Zoom appointments regarding issues that impact them or someone they care about. For questions or to make an

appointment, call (518) 442-5800 or email consultation@albany.edu.
Visit www.albany.edu/caps/ for hours of operation and additional information
If your life or someone else's life is in danger, please call 911. If you are in a crisis and need help right away, please call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255). Students dealing with heightened feelings of sadness or hopelessness, increased anxiety, or thoughts of suicide may also text "GOT5" to 741741 (Crisis Text Line).

*****Please Note—Schedule of Experiments, Assignments and General Information may change during Spring 2022 Semester*****

ABIO 341 NEUROBIOLOGY
FALL 2022

Instructor:	Dr. Annalisa Scimemi, PhD
Office hours:	Tue 09:30-10:30 AM
	Thu 09:30-10:30 AM
Office location:	BIO329
Email contact:	ascimemi@albany.edu
Prerequisites	ABIO130 – "General Biology: Molecular and Cell Biology"
	ABIO131 – "General Biology: Ecology and Physiology"
Lecture schedule:	Tue, Thu 10:30-11:50 AM
Class No:	5201
Grading:	A-E
Credits:	3
Lecture room:	LC19
Course number:	ABIO 341

Course description: Welcome to the Neurobiology course! This Neurobiology course focuses on a biophysical and cellular, quantitative analysis of the nervous system and covers a wide range of topics designed to introduce students to the fundamental operating principles of the central nervous system. A basic understanding of linear algebra is recommended for this class, including a clear understanding of unit conversions, logarithms, and exponential functions. Students should also be familiar with current flow in electrical circuits, as this represents the core mechanisms with which neuronal and non-neuronal cells respond to synaptic stimulation. In most cases, the students will be presented the key original experimental studies that led to the development of our current understanding of how neuronal and non-neuronal cells communicate to each other. The course is organized in four major sections that provide an overview of the electrical properties of brain cells, the mechanisms of inter-neuronal communication, the function of complex sensory and motor systems, and synaptic plasticity.

Objectives: At the end of this course, students will have a mechanistic understanding of how the functional properties of the nervous system enable the execution of complex cognitive and motor functions in humans and other organisms. In addition, they will gain robust critical thinking and thorough understanding of how to design experiments to address fundamental neuroscience questions.

Topics outline:

Exam 1

1. Principles of signaling and organization
2. Current flow in electrical circuits
3. Ion channels and signaling
4. Structure of ion channels
5. Ionic basis of the resting potential
6. Ionic basis of the action potential

Exam 2

7. Electric signaling in neurons
8. Ion transport across cell membranes
9. Properties and functions of neuroglial cells
10. Mechanisms of direct synaptic transmission
11. Indirect mechanisms of synaptic transmission
12. Release of neurotransmitters at synapses

Exam 3

13. Neurotransmitters in the central nervous system
14. Transmitter synthesis, storage, transport and inactivation
15. Synaptic plasticity
16. The molecular and cellular biology of synaptic plasticity
17. Mechanisms of extrasynaptic communication
18. Sensory transduction

Exam 4

19. Transduction and transmission in the retina
20. Touch, pain and texture sensation
21. Constructing perception
22. Initiation and control of coordinated muscular movements
23. A panoramic view of Alzheimer's disease
24. Ongoing neuroscience research

Exam dates:	Exam 1	Tuesday September 13, 2022
	Exam 2	Thursday October 6, 2022
	Exam 3	Thursday November 3, 2022
	Exam 4	Thursday December 1, 2022

Required Textbook: "From Neuron to Brain" 6th Edition.
By A. Robert Martin, David A. Brown, Mathew E. Diamond, Antonino Cattaneo, Francisco F. De-Miguel.

Blackboard: All the PowerPoint lecture slides are posted on Blackboard after class.

Classroom technology: We will be using the Top Hat (www.tophat.com) classroom response system in class. TopHat will be used to monitor students' attendance to classes. Students will be able to submit answers to in-class or homework questions using Apple or Android smartphones and tablets, laptops, or through text messages. Visit http://tinyurl.com/THStudentRegistration for the Student Quick Start Guide which outlines how you will register for a TopHat account, as well as providing a brief overview to get you up and running on the system. An email invitation will also be sent to your email account (if you do not receive this email, you can register by visiting our direct TopHat course URL https://app.tophat.com/e/463079). The course join code is **463079**. Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing. Should you require assistance with Top Hat at any time, since it requires specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in-app support button, or by calling 1-888-663-5491. The instructor is not responsible for technical glitches of TopHat on any student device. The following are available subscription options for students:

One term:	$30 for 4 months of access to TopHat
One year:	$48 for one full-year access to TopHat

Grading: The final grade is based on the score of the four exams and participation. Each exam is worth 100 points and TopHat question participation adds another 20 points. An extra 5 points can be obtained by joining IN PERSON the Society for Neuroscience Hudson-Berkshire Chapter Annual Meeting. An extra 5 points can be obtained through the Public Engagement component of the course, in collaboration with the Alzheimer's Association.

Missed exams: If an exam is missed due to a documented medical emergency, you must contact the instructor as soon as possible to schedule the make-up exam. You will need to present a doctor's note.

Note that make-up exams must be taken within a week after the missed exam. If this is impossible due to a prolonged illness, you should contact the Dean's office for an extended excused absence.

Assignments (TopHat): The TopHat App will be used to take attendance to each class (not mandatory, not graded) and present exam-style multiple-choice questions. The questions will be assigned during class and/or as homework questions, at the discretion of the instructor, to prepare you for the exams and gauge the class's progress. These TopHat questions are assigned every week after the Thursday class (11:50 AM) and are due by the beginning of the following class (Tuesday 10:30 AM). If, however, the exam falls on a Thursday, then the TopHat questions are assigned at the end of the Tuesday class (11:50 AM) and due by the end of the same day (Tuesday 12:00 AM), to allow students to review all questions on Wednesday, the day before the exam. Students can also use TopHat to pose questions to the instructor. The number of questions assigned to students will vary based on the topics covered in class. Question participation, not answer correctness, is graded for this course. The participation points for submitting answers will be assigned according to the scale shown below. Please do not request to be excused for missing questions given during class. These requests will not be considered since the grading described above already allows four "excused" absences.

TopHat question participation points (i.e., % assigned questions answered)	**Assigned points**
90-100%	20
80-89%	16
70-79%	12
60-69%	8
50-59%	4
<50%	0

Scientific Engagement Extra Credits: Active participation to the scientific content of the Society for Neuroscience Hudson-Berkshire Chapter Annual Meeting, which will be held Saturday September 24, 2022 in the Life Sciences Building (D'Ambra Auditorium) at SUNY Albany provides an opportunity for students to witness first-hand how neuroscience principles learnt in class are applied to scientific research. Registration ends on September 9, 2022. Registration link:

https://forms.gle/ZcKoPhz5UysWeBi17

Community Engagement for Extra Credits: This course has a community engagement component with the Alzheimer's Association. Mrs. Elizabeth Smith-Boivin (Executive Director/CEO) and Joseph Heaney (Volunteer Coordinator) at the Alzheimer' Association, will discuss the goals, programs and services offered by the Association, which include an active role in funding research programs, as well as latest advances in Alzheimer's disease research. Students will get extra credits for raising awareness about Alzheimer's disease research, which includes participation in one of the local events organized by the Alzheimer's Association, listed below. Registration links for each event will be provided in class. More information will be provided in class by Joseph Heaney. Additional questions can be directed to the instructor. For each event, you can join the SUNY Neurobiology team. Voluntary donations to the Alzheimer's Association are at the discretion of each person, and not required for this class.

Alzheimer Walk Name	**Location**	**Date**
Loudonville, NY	The Crossings of Colonie Colonie, NY 12205 Loudonville, NY	Saturday October 1, 2022
Hudson, NY	Columbia-Greene	Saturday October 15, 2022

	Community College 4400 NY-23, Hudson, NY 12534	
Queensbury, NY	Queensbury, NY SUNY Adirondack Queensbury, NY 12804	Saturday October 15, 2022
Schenectady, NY	Mohawk Harbor Schenectady, NY 12305	Saturday October 22, 2022

Grade scale (total points scored in each exam + extra credits + TopHat assignments /4):

85% A

80% A-

75% B+

70% B

65% B-

60% C+

55% C

50% C-

45% D+

40% D

35% D-

<35% E

How to Study for This Course:

- Step up your studying time and strategy at the beginning of the course: it is important that you come to class, take good notes, study from your textbook *AND* your notes. Studying from your notes only is not encouraged.
- Study each class immediately after it is being presented: do not procrastinate your study session to the week of the exam, or the day before it.
- Study all course materials, included lecture slides, TopHat questions, videos and other content discussed in class.
- Some students find it useful to form a study group with other students in the class, which meet regularly with a prepared agenda of topics to be discussed.
- A good strategy is to reason through the topics presented in class, rather than attempting to passively memorize notions.
- Do not be shy: ask questions in class and go to office hours if any part of the material is not clear.

Instructions for Taking In-Person Exams:

- You will need your SUNY Card ID and your Student Number (not the SUNY Card number), and pencils (pens OK, but cannot be erased).
- Enter your answers on the ScanTron sheet that is distributed with the written examination. Bubble in your name: last name, first name and student number (starting with 00 or 000). Fill the correct bubbles fully, with pencil or dark pen, with only one bubble filled per row. Incorrect information will result in a missing score because your exam may not be graded. If your score is not posted, contact

your instructor to determine the problem.

- The instructor and proctors will administer exams. Follow their instructions.
- Academic dishonesty will not be tolerated, and it will be dealt with according to the College of Arts and Sciences policies, as described here: http://www.albany.edu/undergraduate_bulletin/regulations.html

ABIO 342 Neurophysiology Laboratory Spring 2022 Syllabus

Course number: ABIO 342
Class no:
Credit Hours: 2
Lab times: Class # 3440 Tuesday 1:30-5:30 PM
Class # 3441 Wednesday 1:10-5:10 PM
Lab location: BI 252

Instructor: Greg Lnenicka
E-mail: gregL@albany.edu
Office: Biology 310

Office Hours: Tuesday and Wednesday 9-10am

Prerequisites: ABIO 201, ABIO 202Z and ABIO 301

Course Description: This laboratory course uses electrophysiological techniques to examine the physiology of the nervous system. The course covers the basic principles underlying action potentials, synaptic potentials and receptor potentials. Students learn to use electrophysiology instrumentation to record these electrical signals from the cockroach, crayfish and human nervous system; the signals are then examined using data acquisition and analysis software.

Learning Objectives: After completing the course, successful students will be able to:

- Describe the foundational principles of action potentials synaptic potentials and receptor potentials.
- Demonstrate proficiency in using electrophysiology instrumentation to record electrical signal from different organisms.
- Interpret electrophysiological data.
- Use electrophysiological analysis software to interpret electrical signal recordings.

Overview of this course:

On Reserve: (Science Library) Neuroscience
6th Ed. Purves et al.
From Neuron to Brain, 5th Ed. Nicholls et al.

Course materials: All reading materials will be provided on Blackboard. You shoulddownload a copy of the lab software (Labscribe) so that you can analyze your data at home; a link is provided on Blackboard. A lab fee is required for this course to cover supplies.

Organization: Students will be divided in Groups 1 and 2 and each group will alternate between Experimental (in person) and Analysis (remote) weeks. For the Experimental week, you will find background material, a description of the lab exercises and a pre-labquiz on Blackboard. The quiz answers are due at the beginning of class. You will submit your lab data by midnight on Friday (Tuesday section) or Saturday (Wednesday section). The next week you find additional readings (often original research papers) and problems (this may involve further data analysis) on Blackboard. This assignment will also be due at midnight on Friday (Tuesday section) or Saturday (Wednesday section). For the final two weeks of class, both groups will meet together for in-person experiments. This lab is paperless so that you will turn in all your assignments as Worddocuments. The files should be named as follows: Quizzes- Q lab number last name,
e.g. Q1smith; Experimental- E, lab number, last name; Analysis- A, lab number, lastname.

Attendance: Given the difficulty making up labs, missing a lab will only be excused inthe case of illness. If you are ill, you should notify the instructor as soon as possible and contact the Dean's office to get a medical excuse.

Academic integrity: Any instances of academic dishonesty (such as plagiarizinganother student's work) will result in a 0 for that assignment and the Dean will be notified for further disciplinary action. For further information on Academic Integrity see:
https://www.albany.edu/undergraduate_bulletin/regulations.html

Classroom Health and Safety:

- Please be sure that you enter the classroom wearing your mask and keep it onfor the entire class period. Sanitize your hands upon entering.
- There will be only one student per work station and only one work station pertable so you will be physically distanced from others.
- All workstations will be decontaminated before class. Also, each station will be provided with a spray bottle of 70% alcohol and hand sanitizers for your personaluse. You should spray down your equipment with 70% alcohol before you leave.

Grade Policy:

Grading. Your grade will be calculated based upon the pre-lab quiz (20%), experimental exercises (40%) and theoretical exercises (40%).

Grade cutoff: A 93%; A-90%; B+ 87%; B 83%; B- 80%; C+ 77%; C 73%; C- 70%; D+ 67%; D 63%; D- 60%.

Reasonable Accommodation Policy: Reasonable accommodations will be provided for students with documented disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Resource Center. That office will provide the course instructor with

verification of your disability and will recommend appropriate accommodations. Reasonable Accommodation Policy: Reasonable accommodations will be provided for students with documented disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Resource Center. That office will provide the course instructor with verification of your disability and will recommend appropriate accommodations.

ABIO 342 Class Schedule:

Date	Topic
Jan. 25, 26	Organizational meeting
Group 1	
Feb. 1, 2	1- Neurophysiological Techniques (Experimental)
Feb. 8, 9	1- Neurophysiological Techniques (Analysis)
Feb. 15, 16	2- Cockroach Proprioceptors (Experimental)
Feb. 22, 23	2- Cockroach Proprioceptors (Analysis)
Mar. 1, 2	3- Cockroach Action Potentials (Experimental)
Mar. 8, 9	3- Cockroach Action Potentials (Analysis)
Mar. 22, 23	4- Crayfish Synaptic Potentials (Experimental)
Mar. 29, 30	4- Crayfish Synaptic Potentials (Analysis)
Apr. 5, 6	5- Crayfish Photoreceptors (Experimental)
Apr. 12, 13	5- Crayfish Photoreceptors (Analysis)
Group 2	
Feb. 8, 9	1- Neurophysiological Techniques (Experimental)
Feb. 15, 16	1- Neurophysiological Techniques (Analysis)
Feb. 22, 23	2- Cockroach Proprioceptors (Experimental)
Mar. 1, 2	2- Cockroach Proprioceptors (Analysis)
Mar. 8, 9	3- Cockroach Action Potentials (Experimental)
Mar. 22, 23	3- Cockroach Action Potentials (Analysis)
Mar. 29, 30	4- Crayfish Synaptic Potentials (Experimental)
Apr. 5, 6	4- Crayfish Synaptic Potentials (Analysis)
Apr. 12, 13	5- Crayfish Photoreceptors (Experimental)
Apr. 19, 20	5- Crayfish Photoreceptors (Analysis)
Groups 1 & 2	
Apr. 26, 27	6- Human Electrophysiology I (Experimental)
May 3, 4	7- Human Electrophysiology II (Experimental)

A BIO 365 Biological Chemistry I
Spring 2022, Class Number 1234
TuTh 9:00am—10:20am, LC 1
Credit hours: 3

Instructor: Dr. Hua Shi, Associate Professor of Biological Sciences
Website: www.albany.edu/faculty/hshi/index.html
E-mail: hshi@albany.edu (please use [*BIO 365*] in the subject line)

COURSE DESCRIPTION

Biochemistry is the field of science that investigates the chemical and molecular reactions that sustain life. The **learning objective** is to study the chemistry and biochemical interrelationship of nucleic acids, proteins, carbohydrates, and lipids; enzyme catalysis; and metabolism. By the end of this course, students should be able to describe the chemical structures, properties, and biological functions of the molecules that make up living matter, and be able to comprehend the current biochemical literature.

PREREQUISITES

This is a one-semester required course for Biology BS majors, with the following prerequisites: A CHM 220 and A CHM 221 (Organic Chemistry I and II), and a grade of C or better in A BIO 212Y (Introductory Genetics).

TEXTBOOK AND READINGS

Required textbook: ***Fundamentals of Biochemistry***, 5th edition, by Voet, Voet & Pratt. Wiley, ISBN 978-1-118-91840-1.

Required Readings are listed in the lecture schedule below. These readings are considered as assignments. (There are no written assignments for this course.) You should make an effort to skim the relevant chapter in the textbook prior to attending each lecture; the text will help you understand the lectures, in which additional information and explanation, not found in the book, may be presented.

LECTURE NOTES

Lecture Presentations (slides, and/or notes) will be made available on Blackboard at https://blackboard. albany.edu. Remember, the slides are outlines and not necessarily the entire material covered in the lectures. They are NOT a substitute for attending the lectures. **Notice: These are copyrighted materials.** Students must comply with Copyright Law and abide by Fair Use guidelines and the TEACH Act. The materials in this course are meant to be used only for the duration of this course and are not to be distributed, published, or circulated to others on the Internet or elsewhere.

ATTENDANCE

Classroom activities and tests that are missed cannot be made up for any student who decides not to attend a class and has no legitimate excuse. Contact the instructor in case of illness, emergency, or other excusable inability to attend. You are responsible for everything orally presented in the lectures—the text is for clarification. In particular, you are responsible for any announcements made in class and through Blackboard or e-mails. For example, it is not a valid excuse to miss an exam

because you missed an announced date change. Students must receive **written** permission of the instructor to use recording devices/apps in class.

OFFICE HOURS:

Tuesday 11:00 am-12:00 pm and Wednesday 5:00-6:00 pm. Zoom by arrangement.

TESTING POLICIES

There will be 3 non-cumulative tests scheduled during normal lecture times throughout the semester (see the schedule below for time). Each test will only cover the materials presented after the previous exam and before the current exam. Scores of all 3 would be considered for final grading. **There is no final exam.**

The only individuals allowed to take a makeup exam are those who missed the normally scheduled exams with legitimate reasons established by the University [For medical excuses see www.albany.edu/health_center/medicalexcuse.shtml]. That means the instructor should receive a memo from the **Office of the Vice Provost for Undergraduate Education** stating that the student has a valid excuse for missing an exam and appropriate accommodation should be provided.

GRADING

Final letter grade will be derived from the average of numeric scores of the three exams. An average of 85 will make an "A," below which each discrete letter grade (A-, B+, B, B-, etc.) will approximately cover a 5-point interval (see the table below). Any missed exams will be graded as a zero (0). Missing all three exams will make an "F." The grade distribution will be consistent with general practice of 300/400 level UAlbany biological courses.

Numeric Score	Letter Grade	Numeric Score	Letter Grade
85 and > 85	A	55 – 59.99	C
80 – 84.99	A-	50 – 54.99	C-
75 – 79.99	B+	45 – 49.99	D+
70 – 74.99	B	40 – 44.99	D
65 – 69.99	B-	35 – 39.99	D-
60 – 64.99	C+	< 35	E

ACADEMIC INTEGRITY

Strict academic honesty is expected in class, consistent with SUNY's Honor Code. Respect for yourself, your classmates, and your instructor demands that all work you produce in this class be your own. Plagiarism (the unacknowledged use of others' words and ideas, which includes cutting-and-pasting from the Internet) and cheating (such as sharing test answers, submitting a paper purchased or shared on-line, or submitting the same paper to more than one class) are unacceptable. See http://library.albany.edu/infolit/integrity. It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. Students found to be in violation of the academic integrity policy are subject to both academic and non-academic sanctions; all incidents of academic misconduct will be reported to the Office of Undergraduate Education. The minimum penalty for cheating will be a zero (0) for that assignment,

exam, or quiz. Other penalties can include but are not limited to failing the course, academic probation and/or suspension from the University.

NOTE ON SCIENTIFIC DISCOURSE

To promote inclusivity in science, the instructor will strive to avoid long-held scientific descriptors for non-human entities that could cause offence to some sectors of society, as the continued use of such terminology will come to the attention of people who find it hurtful. Language freighted with racism, degradation, brutality, and human suffering has no place in the scientific lexicon. When certain technical terms, especially those of polysemous nature, are not avoidable for pedagogical reasons, they should be used according to strict definition without evoking or invoking plurisignation. When a word is used to designate a thing or to express a concept in biochemistry, both its denotation and connotation should not be confused or conflated with those of its common everyday usage. In particular, a scientific term should not be construed with derogatory connotation which it may carry in other contexts.

ACCOMMODATIONS

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518-442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations. To take an exam at the DRC disabled students must make arrangement and notify the instructor 72 hrs prior to each exam.

If you require a reasonable accommodation in order to exercise your right to religious observation, provide notification to the professor concerning anticipated religious holidays that pose conflicts with required attendance.

The university's policy on non-discrimination states that students, staff, and faculty should be free of harassment or discrimination based upon race, color, national origin, religion, creed, age, (dis)ability, sex, gender identity and/or expression, sexual orientation, familial status, pregnancy, predisposing genetic characteristics, military status, domestic violence victim status, or criminal conviction; the Office of Diversity and Inclusion is available at 518-956-8110, www.albany.edu/diversityandinclusion/index.php.

The instructor will honor all requests to address students by preferred name and/or gender pronoun(s).

STUDENT PRIVACY

Information about students will not be revealed directly or indirectly to third parties. *The Family Educational Rights and Privacy Act (FERPA)* forbids disclosure, to third parties, of student personally identifiable information (PII) and information related to a student's academic work without the student's written consent. A third party may include, but is not limited to: fellow students, parents, family members, classmates, friends of the student in question, unofficial guest instructors or teaching assistants that are not officially assigned to the schedule of classes, and third-party providers such as Dropbox, Box, Weebly, etc. when there is no campus contract for the service with the provider.

MENTAL HEALTH

As a student there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. The University at Albany Counseling and

Psychological Services (CAPS) provides free, confidential services including individual and group psychological counseling and evaluation for emotional, social and academic concerns. For questions or to make an appointment, call (518) 442-5800 or email consultation@albany.edu. Visit www.albany.edu/caps/ for hours of operation and additional information. **If your life or someone else's life is in danger, please call 911. If you are in a crisis and need help right away, please call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255). Students dealing with heightened feelings of sadness or hopelessness, increased anxiety, or thoughts of suicide may also text "GOT5" to 741741 (Crisis Text Line).**

COVID-19 INFORMATION

For current information and instructions concerning Covid-19, please visit the University's COVID website (https://www.albany.edu/covid-19).

CHANGES

The schedule and procedures in this course are subject to changes in the event of extenuating circumstances. The instructor retains the right to modify the syllabus and to give notice to the class of any modifications in a timely fashion. Students are responsible for apprising themselves of such notices.

In the event of inclement weather and other emergencies, class cancellations and postponement of exams will be determined and communicated at the University-wide level. Please continue to monitor the University's website, www.albany.edu/emergency, the University's Emergency Information Line at (518) 442-7669, and your email for updates. Students are encouraged to sign up for "UAlbany Alert" by Text Message, Voicemail or Email Notifications, and exercise best judgment in determining whether it is safe to travel to campus.

ABIO 365 SPRING '22 TENTATIVE SCHEDULE

Date		Lecture #	Topic	Reading
01/25	Tu	1	Introduction	Chapter 1
01/27	Th	2	Thermodynamics I	
02/01	Tu	3	Thermodynamics II	
02/03	Th	4	Water I	Chapter 2
02/08	Tu	5	Water II	
02/10	Th	6	Nucleic acids I	Chapters 3 & 24
02/15	Tu	7	Nucleic acids II	
02/17	Th	8	Protein I (amino acids)	Chapter 4
02/22	Tu	Review I		
02/24	Th	**Test I**		
03/01	Tu	9	Protein II	Chapter 5
03/03	Th	10	Protein III	Chapter 6
03/08	Tu	11	Protein IV	Chapter 7
03/10	Th	12	Carbohydrates I	Chapter 8
03/15	Tu	***Spring Break***		
03/17	Th	***Class suspended***		
03/22	Tu	13	Carbohydrates II	Chapter 8
03/24	Th	14	Lipids and biological membranes I	Chapters 9 &10
03/29	Tu	15	Lipids and biological membranes II	
03/31	Th	Review II		
04/05	Tu	**Test II**		
04/07	Th	16	Enzymes I	Chapters 11 &12
04/12	Tu	17	Enzymes II	
04/14	Th	18	Enzymes III	
04/19	Tu	19	Metabolism I	Chapter 14
04/21	Th	20	Metabolism II	Chapter 15
04/26	Tu	21	Metabolism III	Chapter 17
04/28	Th	22	Metabolism IV	Chapter 18
05/03	Tu	Review III		
05/09	Mon	**1:00 pm -3:00 pm**	**Test III**	

N.B.: **The date and time for Test III is different from the regular class time zone.** Because the university policy does not allow examinations of more than one-half hour's duration to be given during the last five regularly scheduled class days of a semester, Test III is arranged according to the Final Exam Schedule issued by the Registrar.

ABIO 366
Biological Chemistry II
Term: Spring 2022
3 Credits
TuTh 10:30AM - 11:50AM in Social Science 131

Instructors: Professor Pan Li
Office Locations: Life Science Research Building 1108
Contact: pli@albany.edu

Office hours:
Li: By appointment

Contacting the instructor:
Please contact instructor by e-mail. Include ABIO 366 in the subject line. Any changes to the syllabus, course outline, schedule, office hours, or other pertinent information will be posted to Blackboard and sent to students via email with as much notice as possible.

Changes of the course pending Covid pandemic:
It is a difficult time for all of us in higher education. The syllabus, including the schedule attached, is tentative. We may have to adjust as the semester goes on. I will inform the class all the changes beforehand, if it is possible. Major revisions such as changes of quiz format will be discussed and agreed with the majority of class.

Pre-requisites: Abio 365 (Biological Chemistry I).

Course description: This is the second course in a two-semester biochemistry sequence. The course will further review critical metabolism and reaction involved in the central dogma.

Course objectives: Students will learn about major metabolic pathways of sugars, lipids, amino acids, and nucleotides. Students will also learn biochemistry underlying DNA replication, RNA transcription, and protein translation.

Textbook: Fundamentals of Biochemistry (5^{th} ed) by Voet, Voet, Pratt, published by Wiley.

Blackboard Material
Syllabus, PowerPoint slides, reading material, assignments, and grades will be posted on Blackboard. Course materials, including lecture notes, will not be distributed in class.

Grading

QUIZZES (200 points total): There will be seven (7) quizzes, worth 40 points each. **Your lowest two (2) quiz scores will be dropped; that is, your top five (5) quizzes will be counted towards a total of 200 points.** These quizzes will be given at the **beginning** of class, so it is strongly advised that you arrive promptly. The quizzes will be self-graded and discussed the day they are given. The format of these quizzes will be multiple-choice questions. Some quizzes may have points based on assigned readings or other assigned materials. There will be no regular make-ups given for these quizzes, so attendance and timeliness is essential. Missing a quiz for any trivial reason (e.g., oversleeping) will mean that quiz grade (0) will be one that is dropped. If you have an exceptional circumstance that requires you to miss more than one quiz, you will need to discuss this with Dr. Li privately. The purpose of these short quizzes is help you learn the basics of biochemistry, as presented in lectures and in the relevant sections of the textbook. The act of immediate grading has been shown to help the learning process.

Group project (200 points total): No more than three students form a study group to work on a topic and research relevant scientific literature. Each group is expected to submit an outline, make a presentation, and write a report. Details of this project will be distributed separately.

CUMULATIVE FINAL EXAM (100 points): There will be a cumulative final exam that covers the factual material that was tested in the quizzes, as well as key material from the student presentations.

Grades: Total possible points: 500. Grading is on a standard scale (see the table below). I do not "curve" the scores, so all students should have a very good idea of their grades at any point during the semester, and theoretically everyone can make an A!

Score	Grade
≥465	A
≥450	A-
≥435	B+
≥415	B+
≥400	B-
≥385	C+
≥365	C
≥350	C-
≥335	D+
≥325	D
≥300	D-
<300	E

Quiz and exam dates:

Please see schedule at the end of this syllabus.

Attendance Policy: Class attendance is required. Permissions of absence under non-emergency conditions must be requested from the instructors at least 24-hour in advance to avoid a penalty in letter grade.

Standards of academic integrity: The University's Standards of Academic Integrity as defined in the Undergraduate Bulletin will be strictly enforced. As noted in the graduate bulletin: "As a community of scholars, the University at Albany has a special responsibility to integrity and truth. By testing, analyzing, and scrutinizing ideas and assumptions, scholarly inquiry produces the timely and valuable knowledge that guide and inform important and significant decisions, policies, and choices. Our duty to be honest, methodical and careful in the attribution of data and ideas to their sources establishes the foundations of our work. Misrepresenting or falsifying scholarship undermines the essential trust on which our community depends. Every member of the community, including both faculty and students, shares an interest in maintaining the highest standards of academic integrity." For more information and information regarding the consequences of academic dishonesty, please see (http://www.albany.edu/undergraduate_bulletin/regulations.html) and http://www.albany.edu/studentconduct/27179.php

Accommodations for students with disabilities: If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. To request academic accommodations (for example, a note taker), students must contact Disability Resource Center, Phone: (518) 442-5490, http://www.albany.edu/disability/). For additional help you may contact the Office of Academic Support Services (http://www.albany.edu/academics/advising.shtml).

Mental Health Awareness

As a student there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. The University at Albany Counseling and Psychological Services (CAPS) provides free, confidential services including individual and group psychological counseling and evaluation for emotional, social and academic concerns. Given the COVID pandemic, students may consult with CAPS staff remotely by telephone, email or Zoom appointments regarding issues that impact them or someone they care about. For questions or to make an appointment, call **(518) 442-5800** or email consultation@albany.edu. Visit www.albany.edu/caps/ for hours of operation and additional information

If your life or someone else's life is in danger, please call 911. If you are in a crisis and need help right away, please call the National Suicide Prevention Lifeline at **1-800-273-TALK (8255)**. Students dealing with heightened feelings of sadness or hopelessness, increased anxiety, or thoughts of suicide may also text "**GOT5**" to **741741** (Crisis Text Line).

			Content	Quiz	Chapters
1	1/25	Tu	Introduction		
2	1/27	Th	Review of metabolism		14
3	2/1	Tu	Glyconeogenesis		15,16
4	2/3	Th	Glycogen metabolism	Quiz 1 (review-neogenesis)	16
5	2/8	Tu	Glycogen metabolism		16
6	2/10	Th	Photosynthesis		19
7	2/15	Tu	Lipid metabolism	Quiz 2 (glycogen, photo)	20
8	2/17	Th	Lipid metabolism		20
9	2/22	Tu	Amino acid metabolism		21
10	2/24	Th	Amino acid metabolism		21
11	3/1	Tu	Fuel metabolism	Quiz 3 (Lipid, AA)	22
12	3/3	Th	Nucleotide synthesis		23
13	3/8	Tu	Nucleotide synthesis		23
14	3/10	Th	DNA/RNA structire		24
	3/15	Tu	*Spring break*	-	-
	3/17	Th	*Spring break*	-	-
15	3/22	Tu	DNA replication	Quiz 4 (Fuel, nucleotide)	25
16	3/24	Th	Mutation and repair		25
17	3/29	Tu	Mutation and repair		25
18	3/31	Th	Transcription	Quiz 5 (DNA)	26
19	4/5	Tu	Transcription		26
20	4/7	Th	Translation		27
21	4/12	Tu	Translation		27
22	4/14	Th	Protein degradation	Quiz 6 (translation)	27,21
23	4/19	Tu	Protein modifications		27
24	4/21	Th	Presentations		
25	4/26	Tu	Presentations		
26	4/28	Th	Presentations	Quiz 7 (translation)	
	5/3	Tu	Open		
	5/10	Tu	**Final exam**	8 am - 10 am	

CHEMISTRY 221: Spring 2022
ORGANIC CHEMISTRY II

COURSE NUMBER: ACHM 221
CREDIT HOURS: 4
CLASSES: Tu & Th 9–10:20 am, LC 1
INSTRUCTOR: Prof. Jia Sheng
Office: LS2033B, Phone: 518-437-4419; Email: jsheng@albany.edu
OFFICE HOURS: Tu & Th 12-1 pm, or by appointment

PRE-REQUISITE: ACHM220 or equivalent classes from another accredited institution and get a grade of C- or better.

COURSE DECRIPTION: Introduction to spectroscopic characteristics or organic compounds; continued classification of "reaction types" exhibited by organic molecules; chemistry of carbonyl compounds; aspects of aromatic chemistry, heterocycles, nitrogen compounds, polymers, and biologically important molecules.

Learning Objectives:
Students will gain an understanding of:

-the use of nuclear magnetic resonance spectroscopy, mass spectrometry and infrared spectroscopy for organic elucidation
-the fundamentals of electronic structure and bonding in conjugated and aromatic systems
- reactivity patterns of conjugated and aromatic molecules
- the fundamental electronic structure and bonding in carbonyl compounds
-substituent effects on pKa (in the case of carboxylic acids)
-the reactivity of carbonyl compounds with both hard and soft nucleophiles (carboxylic acids, aldehydes and ---ketones)
- the kinetics and thermodynamics of carbonyl condensation reactions
- the fundamental properties and reactivity of biologically important molecules (e.g. carbohydrates, amines and amino-acids)

BOOKS/RESOURCES

McMurry, *Organic Chemistry*, 9th Ed.

READING ASSIGNMENTS

As you experienced in ACHM220, this course will continue to cover an enormous amount of material during each lecture. Students are strongly encouraged to read the textbook chapter or the class slides ahead of the lecture and work on the questions at the end of each chapter. Many will find it virtually impossible to follow the presented material without prior familiarity with it. It takes me 2-3 hours to prepare for each lecture. I expect a similar amount of commitment from each student. Preparation for class will greatly improve your ability to understand what is covered in the class, and will allow you to ask informed questions.

LECTURE FORMAT

Students are required to attend the lectures in the classroom. Lectures will be presented mainly on the

blackboard and sometimes using PowerPoint slides. You are responsible for all material covered during lectures whether or not you are present. Classes are missed at your own risk.

EXAMS

There will be four midterm exams that will be given during the regular class hour (see the schedule below). You are allowed to drop the lowest-grade midterm exam. The cumulative final will be given at the end of the semester, as scheduled by the registrar. The midterm exams will count for 60% of your final grade. The cumulative final will count as 30% of your final grade. The rest of 10% will be from the homework. I will assign some textbook questions for each chapter, if you finish that and show me your work, you will get the homework points. **Students must attend all exams and be on time! Absence from an exam will result in a grade of zero on that examination. Students will not be allowed to take exams if they are more than 15 min late. A make-up exam will be given only after the student presented acceptable written documentation that the absence was caused by serious illness or other exceptional circumstance such as a previously scheduled varsity athletic competition. The acceptability of the excuse is at my discretion.** Students are advised to notify me in advance of absence from an examination. The form of the make-up exam may be different from that of the scheduled exam. If you have special needs for taking examinations, we will have to work together with the Office of Disabled Students Services.

GRADING POLICY

~90% = A; ~80% = B; ~70% = C; ~60% = D; <60% = E.

Last drop date without 'W': Sept. 2nd. Last drop date with W: Nov. 2nd.

EXAM RULES

1.) Wait outside the lecture hall until you are allowed to enter by a proctor.
2.) **BRING YOUR UNIVERSITY ID** and leave it out on the desk during the exam. **NOBODY** will be allowed to take exams without a university picture ID !
3.) Don't bring ANYTHING to exams except something to write with. No electronic devices such as phones, laptops or headphones are allowed. If you are caught using an electronic device you automatically get *zero* on the exam. And No calculators please!
4.) Leave ALL coats, books, bags, etc. in the back of the room. Please note that caps with visors may not be worn during examinations. Valuables can be placed under your seat. No food is allowed in classrooms!
5.) Exams can be handed in at any time during the hour. Students are not permitted to leave and re-enter the exam room for any reason prior to handing in their exams.
6.) All students will have to sign the attendance sheet and show their university picture ID when handing in the exam.
7.) Cheating on the exam will be zero and formal notification to the Dean of Undergraduate Studies.

ACADEMIC INTEGRITY

The University policy on academic honesty will be enforced. Any incidence of academic dishonesty, as defined by the policies outlined in the Undergraduate Bulletin, will result in a grade of zero and formal notification to the Dean of Undergraduate Studies. Action may range from disciplinary probation, to suspension, to dismissal from the University.

CLASS BEHAVIOR

Inappropriate behavior of any kind will not be tolerated while class is in session. This includes, but is not limited

to, cell phone use loudly (talking or texting), recording (video or audio) of lectures without permission, talking and/or making disruptive sounds, sleeping, snoring, throwing objects, etc. No food is allowed in the lecture hall. Persons engaging in such behavior will be removed from the course in accord with the policies of the Dean of Undergraduate Studies. Use of electronic devices during examinations will be considered as cheating and will be dealt with appropriately.

LETTERS OF RECOMMENDATION

Please note that I do not write letters of recommendation for students earning lower than a grade of B+ in this class, or students who I do not know. If you anticipate that you will need me to write a letter of recommendation on your behalf, you should work hard to earn good grades **AND** take steps to be sure that I know you.

TUTORIAL

Academic Support Services offers a free tutorial program for this course. There are also set times during which teaching assistants are available in the Chemistry Learning Center (2nd floor, south end) specifically for this course. Free tutoring services for this course are offered by the Center for Achievement, Retention and Student Success (CARSS) program. The center offers small group tutoring services that coincide with the course content being covered from week to week throughout the semester. Further details regarding the services offered by CARSS will be announced in the first class.

LECTURE AND EXAM SCHEDULE

Week	Dates	Tuesday	Thursday
1	Aug. 23, 25	Class & Org I review, Ch14.	Ch14 and Ch15 Aromaticity
2	Aug.30, Sept.1	Ch. 16 Elect. arom. subst.	Ch. 16 Elect. arom. subst.
3	Sept. 6, 8	Ch. 16 Elect. arom. subst.	***EXAM 1 (Ch. 14–16)***
4	Sept. 13, 15	Ch. 17 Alcohols and Phenols	Ch. 17 Alcohols and Phenols
5	Sept. 20, 22	Ch. 18 Ethers and Epoxides	Ch. 18 and Ch. 19 Aldehyde
6	Sept. 27, 29	Ch. 19 Aldehydes, ketones	Ch. 19 Aldehydes, ketones
7	Oct. 4, 6	Ch. 19 Aldehydes, ketones	***EXAM 2 (Ch. 17–19)***
8	Oct. 11, 13	***No class (Fall Break)***	Ch. 20 Carboxylic acid, nitrile
9	Oct. 18, 20	Ch. 21 Nucl. acyl substitution	Ch. 21 Nucl. acyl substitution
10	Oct. 25, 27	Ch. 22 C=O alpha subst.	Ch. 22 C=O alpha subst.
11	Nov. 1, 3	***EXAM 3 (Ch. 20-22)***	Ch. 23 C=O Condensation
12	Nov. 8, 10	Ch. 23 C=O Condensation	Ch. 24 Amines, heterocycles
13	Nov. 15, 17	Ch. 24 Amines, heterocycles	Ch. 24 Amines, heterocycles
14	Nov. 22, 24	***EXAM 4 (Ch. 23-24)***	***No class***
15	Nov. 29, Dec.1	**Spectroscopy Overview**	**Final review**

*__**Final Exam is on Dec. 13th, Tuesday, LC1, 8-10 am**__, by Registrar's Office.

ACHM 222 Organic Chemistry Laboratory I Spring 2022 Syllabus

Course number: ACHM 222
Class no:
Credit Hours: 1
Lab Location: Chemistry 332
Lab Time: Times vary with Class no.

Lab Instructor: Mr. Colin Henck Ph.D.
E-mail: chenck@albany.edu
Office: Chemistry 309C
Phone: 518-442-4442

Office Hours: I will hold office hours via Zoom, Wednesday 2:00-3:00 PM.

Prerequisites or Co-requisite: ACHM 220

Course Description: Basic techniques of organic chemistry including extraction, crystallization, distillation, and chromatography; physical properties of compounds.

Course Objectives: The objectives of this course are both to introduce the fundamental laboratory techniques that areused in organic chemistry and to apply them toward the preparation, purification, and characterization of organic compounds.

General Information:

1. Lab Manual:

The spiral-bound lab manual can be purchased in the *College of Arts and Sciences (C.A.S.) Laboratory Sciences* window (CH- B44):

- *Organic Chemistry I Laboratory Manual: Huynh, Henck, Saxton, Burz. 2021*
- Current Organic Chemistry *Lecture Textbook* or equivalent is recommended as a reference.

2. Equipment:

You must purchase the following items from *C.A.S* (CH-B44). All of the items are **required** for this course.

- Splash-Resistant Goggles
- Lab Coat
- Nitrile Gloves
- Face Mask (individuals without a face mask will not be permitted to enter the laboratory).
- **Laboratory Safety Guidelines** *for the Chemistry Laboratory*; University at Albany. Available in

the lab manual and onblackboard.

- A CHEMISTRY LABORATORY SAFETY CONSENT form in the back of the safety guidelines document ***must be signed*** and handed in to the TA ***prior to starting the first lab experiment.*** Any student without a signed consent will not be allowed to do experimentation.

3. Lab Instructional Staff

Title	Name	Office	Telephone	E-mail
Lab Coordinator	Colin Henck	CH-309C	(44)2-4442*	chemlab@albany.edu
Assistant Lab Coordinator	Kathleen Saxton	CH-116 (withinCH-113)	(44)2-2622*	chemlab@albany.edu
Organic Lab Technician	Kelli Allen	CH-108 (withinCH-113)	(44)2-4607*	chemlab@albany.edu
Analytical Lab Technician	Jesse Carozza	CH-108 (withinCH-113)	(44)2-4607*	chemlab@albany.edu

4. How to Log into Blackboard

The "ACHM125: General Chemistry Laboratory" Course is accessible through the Internet. To access courses for the first time (from home or campus), enter the following URL: https://blackboard.albany.edu/ You will see a dialog box that requests your username and password. Your login credentials are the same as your MyUAlbany username and password. Typically, the username is your initials followed by 6 numbers. Please contact the ITS helpdesk (University Library or 442-3700) if you are having trouble logging in.

Grade Policy:

Grades* (1100 points total per semester)

1. **Lab Reports: 100 pts each (600 Points Available)**
   a. ***Lab Report (100 pts total; A-E letter grades)*** - To be completed at home and submitted online before the beginning of the next lab experiment (see due dates on the experiment schedule). You should use all of the lab period to work on your lab report while you have your TA available as a resource. Please note that, as you can see from the experiment schedule, the course load gets heavier as the semester progresses and it will help you stay on top of things if you complete as much work as possible in the scheduled lab time while your TA is available to answer questions.

b. A-E letter grade range with no plus/minus grades (the only possible grades are listed below). The combination of mistakes and how they are incorporated into the final grade is subjective and, therefore, is at the discretion of the grader. However, some general guidelines are provided below.
   - A (100 points) – a couple minor mistakes
   - B (85 points) – several minor mistakes or one major mistake and the highest possible grade if the lab is turned in after it is due.
   - C (70 points) – a couple major mistakes or excessive minor mistakes
   - D (55 points) – several serious major mistakes and blank lab report sections
   - E (0 points) – did not attend lab
     - Examples of Minor and Major Mistakes - The list of minor and major mistakes belowis not exhaustive and many errors are not objectively major or minor. In all cases the severity of a mistake is at the discretion of the grader.
       - Minor mistakes include significant figure errors, simple calculation errors, missing units, spelling and grammatical errors, simple technical errors, and writing that is not concise, and incorrect answers to a question.
       - Major mistakes include complex calculation errors, illegible lab reports,incomplete lab reports, disorganized lab reports, incorrect interpretation of data, no data collected, disregard for safety precautions. Failure to complete the prelab before the experiment begins is considered a major mistake.

c. Lab Report Sections:

i. ***Pre-lab*:*** **MUST be completed before the first experimental day of each lab in order to perform the experiment.** Title, purpose, chemical properties and detailed experimental procedure for the whole experiment, hypothesis, pre-lab questions, chemical hazardous, and calculations. Example is given at the end of the syllabus.
   - *Experimental Calculations and Chemical/Physical Properties*: molecalculations, limiting reagent, theoretical yield must have units and proper significant figures, etc.
   - *Hypothesis:* should clearly predict the results of your synthesis or separation experiment (what product is obtained and its theoretical yield, relevant data observed in IR, GC, melting point, etc.) and a brief scientific explanation for your prediction.
     - *Chemical Hazards and Waste:* A brief paragraph described each chemical hazardous and what precaution must be taken when handling them in lab.
     - *Experimental Procedure:* A complete written procedure for both days ofan experiment is required at the beginning of the first day of an experiment. Paraphrase the lab manual with sufficient details in bullet points so the experiment could be performed with only your written procedure.
   - *Observations:* Written observations must be in complete sentences and clearly describe what was observed. All relevant calculations, and collected data during lab must be shown including units, sig. figures. Example is given at the end of the syllabus.
   - *Technique:* Experiment set-up, proper handling of chemicals, etc. Disregard for safety instructions is considered a major mistake for grading purposes.
   - *Mechanism (if applicable):* A detailed mechanism must be drawn for each step of the

reaction. Any relevant resonance structures must be included. Each step of the mechanism must be explained in 1 to 2 sentences (not more).

- *Separation Scheme:* A separation scheme must be included for each experiment. It must include each separation step and demonstrate how a pure desired product is isolated from the rest of the chemicals, solvents, reagents, etc. used in the experiment.
- *Discussion Section:* Questions/guidance will be provided in the lab manual to help shapeone or more of the following discussion section items. All discussions must be written inclear, concise and complete sentences and in paragraph form (not simply answering questions one by one).
  - *Separation Discussion*: A concise, well-organized paragraph written to address how the desired product isolated from the other unwanted compounds.A good separation discussion should clearly state how one compound is separated from the others chemically and physically without going into detailed, descriptive procedure. Your separation discussion should be written base on your separation scheme. Separation techniques are liquid-liquid extraction, filtration, recrystallization, solvent evaporation, etc., not the amount of reagents used, the type of glassware, the technical parts of separation like draining a solution, pipetting, spotting, mixing samples, or venting glassware, etc.
  - *Product Discussion:* Final product(s) must be shown to TA before leaving lab. A written explanation of the purity of the product is required. The explanationshould include any observations regarding the product's purity that have been gathered during the lab experiment and a clear interpretation of the observations must be included. Yield, color, scent, melting point, IR spectra, GC chromatograph, among others are relevant observations that should be included and interpreted in the product discussion section.
  - *Error Discussion:* Discuss what errors, if any, may have occurred in the experiment and their effect on your results. How could these errors have been corrected? Be sure not to limit this section to errors in your experimental technique, also include errors or limitations of the experiment as it was performed and make suggestion on what might be done differently if more time or different equipment was available.

ii. ***Post-Lab Questions:*** A set of questions about each experiment is provided in the back of the lab manual. The questions will not be returned, but can be seen for feedback by asking the TA. Very limited partial credit will be given for the questions.

2. Quizzes and Final: Three quizzes: 50 pts each. Final exam: 250 pts (total 400 Points Available)

Three announced 15- minute quizzes given at the beginning of lab (SeeExperiment Schedule) (50 pts)

- Quizzes will not be returned and must be reviewed with the TA during office hours or by appointment within 2 weeks of when they are given.
- Final exam (cumulative) (250 pts) given during the last day of lab.
- The final exam will not be returned.
- The final exam is given during finals week and the date is generally announced in mid-November.

We do not control the scheduling and will let you know when and where the final will be as soon as we know.

3. Molecule Final Project: (100 pts total).

i. Six individual assignments due as scheduled (See Experiment Schedule) (60 pts total; 10 pts each assignment)

ii. Final written portfolio (20 pts)

- A written molecule portfolio must be submitted at the beginning of lab on the last day of the project. It must include the final version of all six parts/assignments that has been done throughout the semester. Be sure to cite any literature sources.

iii. Individual Oral presentation (20 pts)

- An oral presentation will be given the last day of the project. Like the project portfolio, it must include an introduction explaining the project andinformation pertaining to each assignment from the portfolio. This should include a discussion of the incorrect and correct mechanism and separation scheme.

Grading:

Papers are graded by the teaching assistant in each section and will be returned at the next lab meeting. Initial grade disputes should be made with the teaching assistant in a timely manner. Ifyou are unsatisfied with the teaching assistant's opinion, please bring the paper to the Lab Coordinator. The Lab Coordinator will regrade the ***entire lab report*** for a period of up to ***two weeks*** after the paper was returned. After the two week period, papers are no longer eligible for regrading.

If an assignment is handed in late, a late penalty of 1 letter grade will be applied. Your report should be submitted in person to your TA. A copy should be kept for your own record. Teaching assistants cannot be held responsible for assignments lost in the mail room.

Lab reports will be graded and returned one week after they are due except for the Lab Practical report. The lab practical report can be reviewed with your TA at any point but will not be returned. Any papers your TA still has at the end of the semester including quizzes will be keptfor at least two weeks. After that, papers will be discarded.

Safety Policies

Splash-resistant safety goggles *must be worn at all times during the experiment.Safety glasses are not permitted in the lab. Although you must be in the lab atthe officially scheduled time, the experiment begins after the TA has presentedthe lab instructions. This means that after the TA is done presenting, safety goggles must be worn at all times.*

Failure to wear goggles after the experiment has begun will result in immediatedismissal from the lab. A grade of zero will be given for the lab report and no make ups will be granted. Random spot checks will be done to ensure cooperation with this policy. If anyone is seen without goggles by the TA or theLab Coordinator, he or she will be asked to leave and receive a zero for the assignment. There are no acceptable excuses or exceptions to this policy. If youneed to take your goggles off for any reason you must first leave the

lab.

At the end of the experiment you must wear your safety goggles out of the lab.Please remember to bring your goggles to lab each week.

This policy is the law and is designed for the safety of all students in the lab. Ifyou have any questions or concerns please contact the Lab Coordinator in CH-309C.

Strict adherence to all safety rules is required including that from the Laboratory Safety Guidelines *for the Chemistry Laboratory,* safety video, lab manual, MSDS, signage in the lab and TA instruction. It is required that each student is aware of and working in accordance with all safety rules and regulations. If you are unsure or have questions about any safety rule or issue, it is your duty to ask the Lab Coordinator **BEFORE** performing the experiment. After (re)reading the booklet ***Laboratory Safety Guidelines*** *for the Chemistry Laboratory*, ***sign a consent form***, which is located at the end of the guidelines, and then submit it to your teaching assistant at the beginning of the first lab experiment.

- Failure to wear proper eye protection (goggles) ***whenever inside*** the laboratory after an experiment has started, will result in your both being dismissed from the lab class and given a grade of zero for the lab report.
- Failure to wear an approved face mask or facial covering in the proper fashion (covering the nose and mouth completely) whenever inside the laboratory ***at any time*** will result in your both being dismissed from the lab class and given a grade of zero for the lab report. Please help to contain the spread of Covidby being responsible with your mask.
- **Proper laboratory apparel** must be worn, including a lab coat and gloves. You are required to wear long pants or other article of clothing that COMPLETELY covers the entire length of the legs and feet. Therefore, shorts, capris, skirts, or open-toed shoes, such as sandals or flip-flops are **strictly prohibited**. That is to say; completely covered legs and feet are required to perform experiments. In addition, long hair should be tied back. Failure to follow the dress code will result in immediate dismissal from the lab.
- **Contact lenses should not be worn in lab.** Contact lenses may be soluble in some solvents used in thelab. If someone wearing contact lenses gets solvent in their eye, it could permanently harm their vision.There is no way for us to check for contact lenses, so it is the student's responsibility to ensure they arenot worn in the chemistry lab.
- **Gloves** are worn in the lab for your safety; they should ***never*** be worn out of the lab and into the hallway,or any other place. Wearing contaminated gloves outside the lab can be a hazard to everyone around by transferring dangerous chemical residues to public areas and surfaces.
- **NO FOOD OR DRINK** allowed in the lab at any time. The lab is not a safe place to eat or drink. Being seen with any food or beverage will result in immediate dismissal from the lab.
- Chemicals should ***never*** be poured into the sink drains; proper waste containers are provided inside the fume hood. Moreover, sinks must be kept free of debris, like paper towels, hoses, clamps, broken glassware, etc.
- **NO UNAUTHORIZED EXPERIMENTATION.** Unauthorized experimentation is a danger to everyone in the lab. The only experimentation permitted is the written procedure of the experiment tobe performed. All other experimentation is strictly prohibited.

- The lab may contain chemicals that students in other courses are using. Working with chemicals, no matter their source, other than the chemicals described in the experiment being performed, is strictly prohibited. **READ THE LABELS BEFORE USING ANY AND ALL CHEMICALS**. This includes but is not limited to different concentrations of the same chemical. It is a danger to everyone in the lab.

Laboratory Policies:

The following policies have been established in order to safely operate the laboratory and to giveyou the greatest amount of time to perform each experiment. These policies should be used in conjunction with the Laboratory Safety Guidelines *for the Chemistry Laboratory*.

- Safety must always be the first priority in the *General Chemistry Laboratory*. All safety rules willbe strictly enforced. You must wear your safety goggles in the laboratory at **all** times. Failure to wear proper eye protection while in the laboratory will result in your being both dismissed from the lab class and given a grade of zero for the entire experiment. Moreover, proper laboratory apparel must be worn, including a lab coat and gloves. Open-toed shoes or shoes with multiple openings cannot be worn in the lab. Shorts are not permitted. Legs and feet must be completely covered. If you observe anything that you deem as unsafe, please report it immediately to your instructor, so that the problem can be remedied. In the event of an accident in the lab, the instructorshould be notified immediately.
- Safety also includes the ongoing pandemic. All persons in the lab must wear a proper facial covering as approved by the university, and this covering *must* cover the nose and mouth at all times. Removing the mask for any is not permitted. Failure to wear your mask properly while in the laboratory will result in your being both dismissed from the lab class and given a grade of zerofor the entire experiment as well as reporting the incident to appropriate University authorities.
- All glassware will be placed on shelves/drawers in the lab and each student must obtain his or her items at the beginning of lab. **It is your responsibility to check that the glassware is in good condition BEFORE you start working with it. If you find an item is *broken* to begin with, you must alert the Teaching Assistant immediately.** Many of the glassware items are expensive, souse each item with care and be sure to clean all glassware used at the end of each experiment. When you have completed your laboratory work, you are responsible for returning your all your glassware in its original condition to where it came from. Dirty glassware and broken glassware may not be returned to the shelves. Please inform your TA if something was broken.
- Common sense and good safety practice require that side benches, hoods, and the lab equipment be kept clean. Any broken glass or spilled chemicals must be cleaned up immediately. Sinks must be kept free of debris such as paper towels, hoses, clamps, broken glassware, etc. You are responsible for cleaning your lab station by the end of each lab class. If your lab station is left in amess or spills are not immediately wiped up then your instructor will deduct points from your labreport grade.
- Chemicals should **never** be poured into the sink drains unless specifically authorized by the TA. Designated waste containers are provided inside the fume hood.
- You are expected both to show courtesy toward fellow classmates and to respect the lab equipmentthat is provided. Anyone abusing any piece of furnished equipment will be charged for damages.

  "Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning, and psychiatric disabilities. If youbelieve you have a

disability requiring accommodation in this class, please notify the *Director of Disabled Student Services* (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and willrecommend appropriate accommodations."

- Your cooperation will be expected and required, so that the laboratory can operate as safely and efficiently as possible. If you have any problems concerning lab, please do not hesitate to contactthe laboratory coordinator or the course instructor.

Lab Group Policy:

In this course students *must* work as a team with a lab partner (in groups of 2). If an odd numberof students are in class on any given day then a team of three must be formed. Forming and working in teams is required because collaboration/teamwork is part of the educational experience in this course and there is not enough equipment for students to work individually. Final project teams (if applicable) may be groups of more than two or three students. Team sizesfor final projects are stated in the lab manual. Forming teams is solely the responsibility of the students in the course; at no time will the TAs or staff be involved in team forming or switching partners/groups.

While students must work together to collect data, perform calculations, and interpret results, all written work will be turned in individually and must be in each students own writing. Any written work that is identical within a group is plagiarism and is a violation of the Student Code of Conduct.

Lab Cleanliness Grade:

In real world chemistry labs, scientists have to share the same working space. Each of them is responsible for keeping their work area and equipment clean and neat. College teaching labs are no different; each section of a lab shares the same chemicals, balances, instrumentation and workspace. Due to the nature of working in a shared space it is impossible to know who is using what at any given time. Therefore, it is the responsibility of the entire class to ensure the lab is maintained in a safe, clean, and neat manner. **Failure to keep the lab clean will result in a full letter grade penalty on the experiment performed that day for every student in the class.** It will not be graded individually, but rather as a class. Keep in mind that this doesn't mean if a chemical is knocked over, everyone will get points taken off. Instead, if a spill occurs, the TA should be alerted and everything should be cleaned up in a safe an organized manor. Not all spillsare major, but even the most minor spill must be cleaned up immediately and safely, in order to avoid personal injury as well as damage to equipment. Below is a list of things to keep in mind when working in the lab:

a) Labware must be returned to its home in an organized manner. All glassware must be clean and as dry as possible before it is returned. Dirty and/or disorganized glassware on the shelves will result in a lab cleanliness points being taken off for the class.
b) Lab equipment like balances, Microlabs, and centrifuges are not to be moved around.
c) Electrical equipment such as PCs, network switches, Microlabs, centrifuges, or balances or transient equipment like heating/stirring plates currently in use are **never** to be unplugged to free a plug for personal student electronics. Doing so will result in dismissal from lab with a zero.
d) Reagent bottles, waste containers are capped and put back where they came from after they are used, whether that is in the hood, on the lab benches, in the balance room, or on the side bench.
e) Spilled chemicals, hazardous waste, etc. are cleaned up safely and disposed of properly

f) Broken glassware is cleaned up and placed in the proper waste container
g) Balances and the balance table/area is free of chemicals and other debris
h) All glassware is cleaned and returned to its proper location in the lab
i) When instrumentation is used, the area should be left clean and free from debris
j) All paper towels, Kimwipes, plastic pipettes, etc… that were used in the lab must be disposedin the appropriate trash container and are not left on the benches or on the floor
k) All bench tops are cleaned with water and left free from chemicals after the experiment is over
l) Because of the ongoing pandemic, ***all students must wash their hands at the designated sink***before performing the experiment, as well as after. Please remember that hand-washing shouldproceed for about thirty seconds minimum and thoroughly cover the hands. This will keep bothchemicals and germs from spreading. Please help contain the spread of the virus. Working in a clean lab is safer for everyone. Each of you will be asked to do your part to ensure that you and your classmates have a neat and safe workspace and this will be enforcedby grading your group effort toward lab cleanliness.

Academic Honesty:

The policies, penalties, procedures and standards outlined in the *Undergraduate Bulletin* and in the *Policy on Community Rights & Responsibilities of University at Albany* will be followed. A failing grade is a possible result of academic dishonesty. Disruptive classroom behavior may result in lowering of a student's grade in accordance with the policies of the Dean of Undergraduate Studies. You are welcome to discuss any course-related problems with the chemistry facultyand staff members of the department.

Attendance:

Laboratory attendance is mandatory. If a student is absent (or anticipates an absence) from a labclass due to illness, family emergency, religious observance, or official university activity then he or she is urged to make up the laboratory experiment at another lab class—if possible. This rescheduling process is facilitated by your TA. A Permission Notice to attend another lab classwill be issued via email by YOUR TA ONLY; admittance to another lab class will not be allowed without a Permission Notice.

Note that each laboratory experiment is offered only during the week it is scheduled. Make-ups are available on a first come first serve basis. No online makeup labs will be available for any reason. Makeup labs will be available during makeup week (April 18th-122nd)). This experimentmust be performed by students who missed an experiment and did not or could not make it up during the semester. Even students with proper medical documentation, who were unable to make up a lab the week it was performed, must perform the make-up experiment. You do not need to bring documentation to make up a lab during the scheduled makeup week.

If a student is absent for multiple experiments and has written documentation, that student must see the lab coordinator at office hours in a timely manner. Excused absences, for students who missed multiple labs, will only be considered in the most extenuating circumstances, with documentation for all absences and with the consent of the lab coordinator. Consent of the lab coordinator for excused absences must be received prior to make-up week. Under no circumstances will credit be awarded for the course if you are absent from more than two lab experiments. If a lab is missed but made-up, it will

not be considered an absence. A grade of incomplete will only be considered in the case of unforeseen circumstances and only with properdocumentation. Students who are absent for any reason are still responsible for the missed information, which may be subject matter on quizzes. So, you are encouraged to make-up missedexperiments the week they are performed.

Missing a lab experiment, and not making it up during the week the experiment is originally scheduled will result in the need to complete the make-up lab during the scheduled times duringthe semester. Makeup quizzes will also be available. Below are all possible scenarios for missing a lab. Please find the lab experiment you missed and carefully read the implications anddue dates.

- A one-day experiment: Attend the scheduled make-up lab to perform the experiment you missed. The lab report is due one week after you complete the makeup lab. Your grade for the experiment will remain "I" for incomplete until you submit the lab report for the experiment youmissed.
- Day 1 of one the two-day experiment is missed: Complete day 2 of the experiment with another lab group and complete day 1 of the experiment during the scheduled makeup days. Thelab report is due one week after you complete the makeup lab. Your grade for the experiment will remain "I" for incomplete until you submit the lab report for the experiment you missed.
- Day 2 of one the two-day experiment is missed: Complete day 2 of the experiment duringthe scheduled makeup lab days. The lab report is due one week after you complete the makeup lab. Your grade for the experiment will remain "I" for incomplete until you submit the lab reportfor the experiment you missed.
- Project Presentation is missed: With valid documentation, the project portfolio will begraded out of 40 points. Without valid documentation, 40 points are lost.

Grading scale

A = 93-100	A- = 90-92	B+ = 87-89
B = 83-86	B- = 80-82	C+ = 77-79
C = 73-76	C- = 70-72	D+ = 66-69
D = 63-65	D- = 60-62	F = 0-59

ACHM 222 Laboratory Schedule Spring 2022

Dates	Experiment	Molecule Project Assignments	Lab Report Due Dates
Jan 19-21	**No Laboratory Classes**		
Jan 24-28	Syllabus review, safety discussion, intro to the project, complete the first pre-lab	**Molecule Assigned on Blackboard**	
Jan 31-Feb 4	Exp 1 Distillation		
Feb 7-11	Exp 2 Column Chromatography and TLC: Day 1		**Exp 1 Due**
Feb 14-18	Exp 2 Column Chromatography and TLC: Day 2 & go over first lab report	**Assignment 1&2 Due**	
Feb 21-25	Exp 3 Acid Base Extraction Day 1		**Exp 2 Due**
Feb 28-Mar 4	Exp 3 Acid Base Extraction Day 2 & **Quiz 1**	**Assignment 3&4 Due**	
Mar 7-11	Exp 4 Stereochemistry		**Exp 3 Due** **Exp 4 Due in Class**
Mar 14-18	**Spring Break – No Laboratory Class**		
Mar 21-25	Exp 5 Lab Practical		
Mar 28-Apr 1	Exp 6 HBr Addition to Alkenes Day 1		**Exp 5 Due**
Apr 4-8	Exp 6 HBr Addition to Alkenes Day 2 & **Quiz 2**		
Apr 11-15	Work on assignments 5&6 in class	**Assignment 5&6 due end of class**	**Exp 6 Due**
Apr 18-22	**MAKEUP LAB**		
Apr 25-29	**Final Project Presentation and Quiz 3**	**Final Portfolio Due**	
May 2-3	**MAKEUP LAB[1]**		
May 9-13	**CUMULATIVE FINAL EXAM TBA[2]**		

1 – This additional makeup lab will be available on Monday or Tuesday only and you must arrange with your TA to attend lab ata time that fits in your schedule.

– The final exam will be scheduled by the registrar's office later in the semester and you will be notified on Blackboard the dateand format of the exam as soon as this information is available.

ACHM 425: Undergraduate Research in Chemistry
2 Credits

Instructor: Alexander Shekhtman
Email: ashekthtman@albany.edu
Office: LSRB 1149
Office Hours: By appointment

Course Description/Learning Objectives Original experimental and theoretical research problems. A printed or typewritten final report is required. Laboratory and conference hours to be arranged. May not be repeated for credit. No more than 3 credits of A CHM 425 and/or 426 may be applied toward the advanced course requirement of the chemistry major. Laboratory and conference hours to be arranged. Objective is to have students learn how to conduct independent research in chemistry and write thorough reports about the experiment conducted.

Prerequisite(s): junior or senior standing and permission of instructor.

Prerequisite(s) or corequisite(s): A CHM 424. *Note: you cannot directly enroll in this course,* you must first arrange for a specific faculty member to be your research advisor and obtain a permission code to enroll in the course section specific to your advisor.

Assignments: An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. Students should discuss with their advisor an agreed upon schedule that they can be expected to be available to participate in research. All work will culminate in a formal paper submitted prior to the end of the semester. Students are also strongly encouraged to present a poster describing their research at the annual Chemistry Undergraduate Research Symposium.

Office Hours: By appointment. Students should arrange regular meetings with your research advisor to discuss your progress.

GRADING: *S/U* graded. A "satisfactory" grade requires a consistent effort and participation in research on an agreed-upon schedule developed in consultation with your research advisor, which may include attending lab meetings and research update meetings in addition to time spent in lab. A formal paper should be submitted to your advisor by end of the semester summarizing your research progress.

Course Resources: Appropriate research resources will be made available by the research advisor, which will differ depending on each student's project focus.

ATM 210: Atmospheric Structure, Thermodynamics, and Circulation

Fall 2023

Version of 15 August 2023; check for updates

Class # 1134

Instructor: Prof. Robert Fovell (rfovell@albany.edu)
Personal Zoom: `https://albany.zoom.us/my/rfovell` (by prior arrangement)
Office: 404 ETEC
Office hours: Whenever I'm in my office, and by appointment
Course page: `http://www.atmos.albany.edu/facstaff/rfovell/ATM210/`

Class meetings: MWF 9:30-10:25 AM in ETEC B011

Zoom recordings: Live and archived recordings accessible via Brightspace. See disclaimer below

TAs: (Office hours subject to change.)

- Jade Cai (jcai5@albany.edu), 432 ETEC. Office hours: Tu 2-3:30, Th 10-11:30
- Rachel Eldridge (reldridge2@albany.edu), 424G ETEC. Office hours: MW 10:30-12:00

Contacting us: Especially for urgent communications, **email all three of us**

Required text: **NONE**. These are useful references:

- Ahrens and Henson, *Meteorology Today*, any recent edition (12th edition referenced below)
- Ahrens and Henson, *Essentials of Meteorology*, a similar (but softcover) book
- Fovell, *Meteorology: An Introduction to the Wonders of the Weather* (video), from The Great Courses

Class description: Technical survey of the atmosphere with application of elementary physical and mathematical concepts to the horizontal and vertical structure of the atmosphere; planetary, regional, and local circulations; weather systems; atmospheric radiation; precipitation physics and thermodynamics. Prerequisite(s): A MAT 111 or A MAT 112 or A MAT 118. Prerequisite or corequisite: A PHY 140 or T PHY 141 or A PHY 142.

Learning outcomes: By taking this course you will be able to:

- Explain how atmospheric composition impacts the global energy balance of Earth's atmosphere
- Understand and discuss the various roles of water in our atmosphere
- Identify and explain the role of atmospheric forces in atmospheric phenomena at different weather and climate timescales
- Evaluate the role of atmospheric composition, water, and atmospheric forces in real world examples of atmospheric flow

Grading: A-E, with distribution as follows:

- Midterm exam 25%
- Homeworks 25%
- Quizzes 25%
- Final exam 25%

Grades will be assigned on the following scheme:

% Possible	Grade
90% and up	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
below 60%	E

Exams: Midterm exam is expected to be **Friday, October 6**, during lecture. Final exam is **Monday, December 11, 1-3 PM**. The final is cumulative. **There are no makeup exams, except as allowable by University policy. Exams must be taken in person.**

Homeworks: There should be FOUR to SIX homework sets, **made available on the class web page**, and collected at or before **start of lecture on date due**. Homeworks handed on the due date but after start of lecture are penalized 25%; later submissions are penalized 50%. Homeworks will not be accepted after start of next lecture following due date, and/or after the time the answer key is posted, whichever comes earlier. If there are fewer than four homeworks, the homework contribution will still be 25%.

Quizzes: You can and should anticipate a quiz every Friday, at start of class, except on midterm exam day. Your lowest 2 quiz scores will be dropped.

Course outline (tentative and subject to change). "Ahrens" refers to *Meteorology Today*, any recent edition; "GC" refers to *Meteorology: An Introduction to the Wonders of the Weather* lectures.

- Overview. Temperature, pressure, and density. (Ahrens Ch. 1, 2; GC 1, 2)
- Atmospheric composition and origin (Ahrens Ch. 1; GC 3)
- Energy transfer, seasons, and the greenhouse effect (Ahrens Ch. 2; GC 4, 5)
- Local circulations: the sea-breeze and the Santa Ana wind (Ahrens Ch. 9; GC 6)
- Moisture and saturation (Ahrens Ch. 4, 5; GC 7, 8)
- Stability and instability (Ahrens Ch. 6, 7; GC 9, 10)
- Winds: forces and consequences (Ahrens Ch. 8; GC 11, 12)
- Global atmospheric circulation (Ahrens Ch. 10, 11; GC 13)
- Fronts and extratropical cyclones (Ahrens Ch. 11, 12; GC 14)
- Thunderstorms, tornadoes, and typhoons (Ahrens Ch. 14, 15; GC 18, 19, 21, 22)

Note: The reference textbooks and *Meteorology* video course include material not covered in class. Exams and quizzes will only reference material covered in class.

Accessibility and Accommodations: Please contact me early in the semester to arrange accommodations. If you need forms or information on accommodations, please visit the DRC; `http://www.albany.edu/disability/`

Absences:

- Class attendance is expected (and very highly encouraged).
- While we will attempt to provide access to live lectures and recordings via Zoom, technical difficulties may occur and Zoom malfunction or other problems will not serve as an acceptable excuse for late or missed classwork.
- Unavoidable, anticipated absences – including absences for religious observances – should be discussed with the instructor **in advance**, and arrangements should be made to make up missing work.
- For information on medically necessary absences, refer to `http://www.albany.edu/health_center/medicalexcuse.shtml`. Information regarding absences due to religious observance may be found here: `https://www.nysenate.gov/legislation/laws/EDN/224-A`.

Academic integrity: Students are responsible for doing their own work, and also responsible for being familiar, and complying, with the University's academic integrity standards. Refer to `http://www.albany.edu/undergraduate_bulletin/regulations.html` for more information.

Psychological health: If your distress is interfering with your relationships, academic, work, or daily life, confidential support is available to you. Contact Counseling and Psychological Services (CAPS) at 518-442-5800 or consultation@albany.edu to schedule an appointment with a psychologist. Virtual counseling services are available. The CAPS website (`www.albany.edu/caps/` also contains self-help resources and other valuable information.

Introduction to Environmental Science
AENV 105 Class #4296 FALL 2023

Meeting: Tuesday/Thursday 9:00 -10:20
Classroom: ETEC B010
Office: Room# 418F Dept. Atmospheric and Environmental Science, ETEC
Instructor: Dr. William L. Roberts III
Office Hours: Before class or By Appointment
TA: Liam K. Sheji
Communication via Blackboard

Textbook: ***Principles of Environmental Science; Inquiry and Applications*** by Cunningham and Cunningham, Ninth Edition, McGraw-Hill, ISBN 978-1-260-21971-5

The textbook is available from University bookstore in the *Connect* format. Connect gives you the option to purchase the printed text also. You are strongly advised to obtain *Connect*!! Additional reading material and data resources may be available through Blackboard, *Connect* or handouts.

Course description: This course provides a survey of contemporary environmental issues related to health and disease, nuclear waste disposal, water resources, energy use and conservation, land reclamation, global climate change, and industrial pollution. Scientific principles and data needed for gaining an understanding of environmental challenges on local, regional, and global scales will be emphasized. No Prerequisites.

Course Learning Objectives: The overall objective of this course is to provide a survey of environmental science for general education students. Progress will be evaluated by regular testing in lecture. Topics to be addressed include the nature of science, sustainability, environmental systems (including fundamental concepts from physics, chemistry, and biology), biodiversity, population growth, environmental policy, environmental impacts due to land use, agriculture, forestry, and mining, and impacts on water, and the atmosphere. We will address global climate change and energy (sources, consumption, and choices). We will also examine waste, waste management, toxins, pollution, and their impact on health.

Moreover, the impact of economics, human psychology, politics, etc. on implementing solutions to environmental issues will also be considered. This course is in the general education category: natural sciences and conforms to the characteristics and learning objectives of that category. Class will meet twice each week (3 hours) for 15 weeks.

Grading: Grading will be based on exams (5-6 exams =50%) and the Final Exam (20%) and Research Paper (30%). Number of lecture exams is not rigid; the umber will depend upon progress and testing performance. Each lecture exam will cover approximately 3 lecture CHAPTERS. Therefore, 18 chapters = about 6 lecture exams. Attendance is important: your notes are only an outline! Context and content are provided in lecture. Augmentation of lecture notes during lecture is recommended. I will use an attendance sign-in sheet to monitor attendance. I reserve the right to modify any of the procedures if deemed necessary. Ample notice and discussion will precede any changes,

Research Paper: A scientific research paper is part of the class. The paper will be based on the Scientific Paper Publication format which will be discussed in class and augmented by a handout. The paper will be on a topic chosen by the instructor and will be a minimum of 1000 words not including the citations. More directions/specifics concerning the paper will follow in lecture.

Exams: The exams will consist of multiple choice questions and a couple of short answer or brief essay. The exams are not cumulative but the material covered during the course does build upon earlier concepts. Any cheating during exams such as text messaging, talking, or copying answers or allowing others to copy your answers will result in a score of zero for the exam and filing of a report with the Undergraduate Dean's Office.

Missed exams: In general. NO MAKEUP EXAMS will be given. Any missed exam will receive a "zero" or be averaged-out of the final grade computation depending upon the discretion of the instructor. Student athletes must provide documentation from the Athletic Department prior to any exam that may conflict with participation in an **athletic event**, not practice. Other excuses for missing exams must be validated at the Office of the Dean of Undergraduate Studies (LC-30). That office will notify the instructor if you have a valid excuse. It is your responsibility to contact the instructor, as soon as possible, ***and of course prior to the exam***, to make arrangements for any ***justifiably*** missed exam. Exams missed without a valid excuse such as a doctor's note or for which no arrangements have been made with the instructor will be recorded with a score of "zero".

Attendance in Lecture: Lecture attendance will be monitored by use of a class sign-in sheet. It is the student's responsibility to be sure they sign-in for each class. Class notes will be provided at the beginning of each chapter. It is your responsibility to obtain class notes whether absent or not! Class power points are on BlackBoard. Students are expected to be on time; everyone should be up by 9:00AM.

Cell Phone Usage: Cell phone usage during lecture is not permitted. BFFs will make it 1 hour 30 minutes w/o your input.

Grade Scale:

A	> 93%	C	73 - 76%
A-	90 - 92%	C-	70 - 72%
B+	87 - 89%	D+	67 - 69%
B	83 - 86%	D	63 - 66%
B-	80 - 82%	D-	60 - 62%
C+	77 - 79%	E	< 60%

SYLLABUS: Spring 2023
Introduction to Environmental Science Laboratory: AENV 106 (1 credit)

Meeting: Tuesday 1:30-3:30pm
Classroom: ETEC 175
Instructor: Erin Potter
Office: ETEC 345 Dept. Atmospheric and Environmental Science
Office Hours: By Appointment
Textbook: ***None; Handouts by Instructor***
Prereq: none **Coreq:** AENV 105

Course description: This course provides a survey of contemporary environmental issues related to health and disease, nuclear waste disposal, water resources, energy use and conservation, land reclamation, global climate change, and industrial pollution utilizing laboratory experiments, exercises and campus field trips. Scientific principles and data needed for gaining an understanding of environmental challenges on local, regional, and global scales will be emphasized. This is a metric based scientific Laboratory.

Course objectives: The overall objective of this course is to provide a survey of environmental science for general education students. Topics to be addressed include the nature of science, sustainability, environmental systems (including fundamental concepts from physics, chemistry, and biology), biodiversity, population growth, environmental policy, environmental impacts due to land use, agriculture, forestry, and mining, and impacts on water, and the atmosphere. We will address global climate change and energy (sources, consumption, and choices). We will also examine waste, waste management, toxins, pollution, and their impact on health. Moreover, the impact of economics, human psychology, politics, etc. on implementing solutions to environmental issues will also be considered. This course is in the general education category: natural sciences and conforms to the characteristics and learning objectives of that category.

Grading: Grading will be based on Laboratory exercises and quizzes. Quizzes will account for 35% of your grade and Laboratory exercises for the remaining 65%. Attendance is important.

A	>=93		
A-	>=90	AN	<93
B	>=87	AN	<90
B	>=83	AN	<87
B-	>=80	AN	<83
C	>=77	AN	<80
C	>=73	AN	<77
C-	>=70	AN	<73
D	>=67	AN	<70
D	>=63	AN	<67
D-	>=60	AN	<63

F	<60%		

Quizzes: The quizzes will consist of multiple choice questions and a couple of short answer, brief essay, or experimental examination /analysis. The quizzes are not cumulative but the material covered during the course does build upon earlier concepts. These will be available on Blackboard and open for 48 hours starting midnight the day they are assigned.

Missed quizzes: In general. NO MAKEUPS will be given. It is your responsibility to contact the instructor, as soon as possible, ***and of course prior to the quiz*** to make arrangements for any justifiably missed quiz. Quizzes missed without a valid excuse or for which no arrangements have been made with the instructor will be recorded with a score of "zero".

Attendance in Laboratory: Laboratory attendance and participation is important. Labs are generally hands-on activities that require students to be present. Students are expected to be on time. This is the time for you to ask questions and get help. Class notes will be provided at the beginning of each lab. It is your responsibility to obtain lab notes/instructions whether absent or not. Labs and power points will be posted on Blackboard after the lab meets. If you miss a lab session, you are responsible for making up assignments. Please try to coordinate with instructor prior to missing lab. Due to the equipment needed for some labs, it may not be possible to make up a lab without a valid excuse.

Late policy: Labs are due one week after they are assigned, with a grace period of 2 days. After that point, 1 point will be deducted per day that it is late.

Cell Phone Usage: Cell phone usage during lab is generally not permitted.

ENV 106 Lab Schedule (subject to change)

Date	Lab
1/24	**Lab 1: Metric System**
2/1	**Lab 2: Scientific Method**
2/8	**Quiz 1, Lab 3: Animal Adaptations**
2/15	**Lab 4: Predator/Prey**
2/22	**Lab 5: Plant Adaptations**
3/1	**Quiz 2, Lab 6: Seed Dispersal**
3/8	**Lab 7: Winter Botany**

3/15	*Spring Break*
3/22	**Quiz 3, Lab 8: Invasive Species**
3/29	**Lab 9: Human Population**
4/5	**Quiz 4, Lab 10: Risk and Probability**
4/12	**Lab 11: Sustainability/Solid Waste**
4/18	**Lab 12: Pollution**
4/25	**Quiz 5, Lab 13: Story of Stuff/Global Footprint**
5/3	**Lab 14: Energy**

ENV 221- Understanding the Earth (3 credits)
Fall 2022

Instructor: Dr. Aubrey Hillman
Email: ahillman@albany.edu
Office: ETEC 421
Office Phone: 518-442-4566
Office Hours: M & W 1:00-3:00 in ETEC 421
or via Zoom with prior scheduling
https://calendly.com/ahillman1/office-hours

TA: Sky Hooler
Email: shooler@albany.edu
Office: ETEC 408
Office Hours: Tu 1:00-3:00

Course Learning Goals: This course is meant to be a comprehensive introduction to geology, with an emphasis on the solid Earth. By the end of this course you should be able to:

1. Identify basic minerals, rocks, and soils
2. Interpret the geologic history and potential geologic hazards of an area
3. Describe interactions between the solid Earth and other components of the Earth system

Class Meetings: M/W, 8:00-9:20, ETEC 175

Readings and Class Materials: Earth: Portrait of a Planet, by Stephen Marshak (7th Edition), Norton, ISBN: 978-0-393-8827-59

Pre-requisites: A CHM 120 or 130 or T CHM 130

Course Communication: While I will make announcements in class, it is important that you pay attention to electronic communication. Check your assigned UAlbany email and Blackboard course page frequently for important announcements.

Course Assessments:

Three in-class exams (80 pts each)	240 pts
Four assignments (40 pts each)	160 pts
In-class activities	80 pts
iClicker	20 pts
TOTAL	500 pts

Exams: Three exams will be given during class throughout the semester. You will not be allowed to take the exam after everyone else unless you have an appropriate documented excuse (see the Medical Excuse Policy (https://www.albany.edu/health_center/medicalexcuse.shtml) and the Attendance and Timely Compliance with Course Requirements (https://www.albany.edu/undergraduate_bulletin/regulations.html)). If you have a scheduling conflict due to a university approved activity, please let me know at least 1 week in advance so you can schedule to take the exam early. Exams are NOT cumulative.

Assignments: There will be four assignments throughout the course related to material we have covered. Late assignments will receive a 20% penalty PER DAY (not class period) that they are late. The late penalty begins at 9:20 AM after class ends for the day. Similar to exams, if you have an appropriate documented excuse, I will accept late assignments without a penalty.

In-class activities: Generally speaking, I will deliver a few lectures on each topic followed by a lab or classroom activity. These activities are meant to enrich your understanding of the material presented during lectures.

iClicker: I will use iClicker as a way for everybody to reflect on lecture material. I only allow participation with the iClicker Student app, so you are required to use a smartphone, tablet or laptop during lecture. It is your responsibility to set up your iClicker Student account in a timely fashion. See the iClicker Expectations and Setup Instructions on Blackboard for more information. Note that iClicker answers will not be graded for accuracy, but students will receive 1 participation point per question answered. I will drop the three lowest points from your final grade to allow for unexpected attendance issues.

Grading Scale:

Grade Scale	Grade Conversion	Grade Scale	Grade Conversion
93-100	A	73-76.9	C
90-92.9	A-	70-72.9	C-
87-89.9	B+	67-69.9	D+
83-86.9	B	63-66.9	D
80-82.9	B-	60-62.9	D-
77-79.9	C+	<60	E

Final grades will be computed to the nearest hundredth using a 0-100 numerical scale. The numerical grades will then be rounded to the nearest tenth. I will not offer extra credit at any point during the semester. I have a 24/7 policy- you must wait 24 hours after receiving a grade before discussing it with me or the TA, and you then have 7 days to question it. After that, the grade is considered set in stone.

Disability Resources: Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning, and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center by contacting them at drc@albany.edu or 518-442-5501. Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs Dr. Hillman that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

Violence Prevention and Sexual Harassment: We are committed to providing a safe learning and work environment. If you are unfamiliar with the University's policies regarding the

prevention of campus and workplace violence (https://www.albany.edu/hr/assets/Campus_Violence_Prevention.pdf) and sexual harassment (https://www.albany.edu/general-counsel/assets/Sexual_Harassment_Policy_and_Procedures_Revised_6-20014.pdf), please review them.

Religious Beliefs: New York State Education Law (Section 224-A) states that campuses are required to excuse, without penalty, individual students absent because of religious beliefs, and to provide equivalent opportunities for make-up examinations, study, or work requirements missed because of such absences. Dr. Hillman will work directly with students to accommodate absences.

Academic Integrity: Students are expected to adhere to the standards of academic honesty. All assignments and exams are to be completed individually. While you will often be working in small groups to complete in-class activities, I expect that your assignments be written **in your own words**. Copying answers to questions, falsification of data/information, or plagiarism (using the work of others as your own) will be grounds for filing a Violation of Academic Integrity Report and an appropriate penalty. See more details here (https://www.albany.edu/graduatebulletin/requirements_degree.htm#standards_integrity).

Resolving Academic Grievances: Please see the Graduate Student Handbook for information about how to resolve academic grievances (https://www.albany.edu/graduatebulletin/requirements_degree.htm#academic_grievance).

Course Description: Provides an introduction to geology, with an emphasis on the solid Earth. Topics include the evolution of the solar system and the early Earth; structure of the Earth; plate tectonics and seismic processes; the chemical composition, structure, and physical properties of rock-forming minerals; formation of rocks through igneous, sedimentary, and metamorphic processes; geologic age determination and geologic time. The interaction between the solid Earth and other components of the Earth system will be stressed.

Tentative Course Schedule (subject to change):

Date	Topic	Reading	Assignments
Aug 22	What is geology?	Prelude	
Aug 24	Journey to the center of the earth	Chapter 2	
Aug 29	Drifting continents	Chapter 3	
Aug 31	Plate tectonics	Chapter 4	
Sept 5	NO CLASS		
Sept 7	Plate tectonics (continued)		
Sept 12	Minerals	Chapter 5	
Sept 14	Minerals (continued)		
Sept 19	**Exam 1**		Assignment 1 due
Sept 21	Igneous rocks	Interlude A, Chapter 6	
Sept 26	Igneous rocks (continued)		
Sept 28	Sedimentary rocks	Interlude B, Chapter 7	
Oct 3	Sedimentary rocks (continued)		
Oct 5	Metamorphic rocks	Chapter 8, Interlude C	
Oct 10	NO CLASS		
Oct 12	Metamorphic rocks (continued)		
Oct 17	Volcanoes	Chapter 9	
Oct 19	Earthquakes	Chapter 10, Interlude D	Assignment 2 due
Oct 24	Earthquakes (continued)		
Oct 26	**Exam 2**		
Oct 31	Geologic structures	Chapter 11	
Nov 2	Geologic structures (continued)		
Nov 7	Geologic time	Chapter 12	
Nov 9	Geologic time (continued)		
Nov 14	Earth history	Interlude E, Chapter 13	Assignment 3 due
Nov 16	Earth history (continued)		
Nov 21	Mass movement	Interlude F, Chapter 16	
Nov 23	NO CLASS		
Nov 28	Mass movement (continued)		
Nov 30	Streams and floods	Chapter 17	
Dec 5	Streams and floods (continued)		Assignment 4 due
Dec 7	**Exam 3: 10:30 AM-12:30 PM**		

Sustainable Development: Energy and Resources
ENV 250 (3 credits)
Syllabus - Spring 2023

Meeting Time: MWF 9:30-10:25 am
Meeting Location: Room ETEC 450 (Class No. 6589)

Instructor: Dr. Sujata Murty, Office: ETEC 429
Email: smurty@albany.edu
Office Hours 1-3pm Wednesdays (in person and zoom) or by appointment

TA: Lena Campisi, Office: ETEC 408
Email: lcampisi@albany.edu
Office Hours 1-2pm Thursdays (in person and zoom) or by appointment

Course Description
This course examines and compares energy production using non-renewable (coal, oil, natural gas, uranium) and renewable resources (hydroelectric, solar, wind, geothermal) relative to present and future environmental and societal impacts. The enormous growth in energy use over the last century has been driven by technological innovation and human population increase. Transitioning to a more sustainable renewable energy infrastructure presents challenges and opportunities that will be examined in this course. In addition to traditional energy resources, the course covers the sustainability of other mineral resources that may be important in this transition. This course is in the general education category: natural sciences and conforms to the characteristics and learning objectives of that category. Prerequisite class work includes ACHM 120, ACHM130 or TCHM 130; AMAT 111, AMAT112 or TMAT118; APHY 140 or TPHY 141.

Course Objectives
Sustainability is one of the major societal challenges for the 21st century, making the topics of energy, natural resources and the environment part of the global arena. The fundamental objective of this course is to utilize scientific inquiry and methodology to define, understand and offer solutions to complex problems (using energy and environmental challenges as case studies). Students will achieve this objective by applying appropriate mathematical principles to analyze data, arrange results, and demonstrate conclusions. Science and technology, however, do not operate isolated from other social concerns. Students will thus also learn to compare and evaluate the impacts of economics, human psychology and politics on implementing solutions. This course aims to provide insight as to how to incorporate scientific thinking into decision-making processes. You can expect to put these skills to work in your evolving roles as consumers, professionals and global citizens.

Required Textbook and Other Materials
1. The **required textbook** for this course is *Renewable Energy: Power for a Sustainable Future* by S. Peake (4th ed., 2018). The textbook is available at the University Bookstore.

2. We will use **iClicker** in this course, a cloud-based software system that can be accessed from your mobile device or through a web browser. Be prepared to use iClicker for every class, as it will be used to assess your class participation (but not to grade for correct responses!). To register and link your account with this class, see the Participation section below or instructions on blackboard.

3. Additional reading material and data resources will be available through Blackboard.

Assessments

Grades will be determined based on a points system with the following elements:

35%	Quizzes	10%	Monthly Synopses
20%	Problem Sets	10%	Online Forums
20%	Group Project	5%	Participation

The grading scale will be:

	B+ 80 to 84.9%	C+ 65 to 69.9%	D+ 54 to 56.9%
A 90 to 100%	B 75 to 79.9%	C 60 to 64.9%	D 51 to 53.9%
A- 85 to 89.9%	B- 70 to 74.9%	C- 57 to 59.9%	D- 48 to 50.9%

Quizzes: Every 1-2 weeks, a quiz will become available at 12pm on Sunday. Each quiz is available for 24 hours from the time it is posted and has a time limit of 30 minutes. Quiz questions are a combination of multiple choice, multiple answer, short answer or matching. Quizzes will be based on the assigned reading, videos, and lectures. These quizzes must be completed in a single sitting, so make sure you won't be interrupted after you begin. **You may not work together on these quizzes**. Please do not share the contents of the quiz with others until after access to the quiz has closed (see the Academic Integrity section below). Contact me ahead of time if any of the completion dates present complications for your schedule.

Problem Sets: These assignments will become available at 12pm (noon) on Monday the week they are assigned. They will be due at 11:59pm on Tuesday of the following week, allowing for 8 days to complete the assignment. Various tasks involving numerical calculations, data research, etc. will be assigned throughout this course in which you will quantitatively assess and compare the production, use and impacts of energy resources. These problem sets are to be submitted via blackboard any time on or before the topic completion date. Blackboard refers to these assignments as tests, but they are not. You may save and return to your work any time before the completion date. **You are allowed to work in groups as long as you write your answers in your own words and make your own figures**.

Monthly Synopses: These assignments will be released on the first day of the month and due at 11:59pm on the last day of the month. Each month you will write a short summary and response for a relevant current event related to energy or the impact of energy production and use. The aim of these assignments is for you to become more attuned to the public discourse on energy options and the technological innovations that are driving that discourse. These assignments also aim to encourage critical thinking when presented with energy information, whether or not as a part of this course.

Group Project: A group essay will facilitate broader class interactions between students. This assignment will allow students to identify, evaluate and engage in sustainable development issues relevant to UAlbany. Additional details will be posted on Blackboard when the assignment is released.

Participation: The iClicker Cloud response system will be used in this class. Sustainable development issues are complex and often require consideration of scientific, political, economic and societal perspectives. We will use iClicker as a way for everybody to discuss and reflect on these complexities. I only allow participation with the iClicker Student app and it is your responsibility to set up your iClicker Student account in a timely fashion. See the iClicker Expectations and Setup Instructions on blackboard for more information. Note that iClicker answers will not be graded for accuracy, but students will receive 1 participation point per question answered. The three lowest daily totals will not be included in the final grade to allow for unexpected issues. On campus tour days, students will instead complete a short survey about the tour (2 participation points/question completed).

Online Forums: Online discussions will occur every 2-3 weeks. Instructions are posted in the "Forums" link on Blackboard. Posts must be made by the completion date to receive credit (noon Friday for initial posts and 11:59pm Sunday for peer responses).

Attendance and Late Work Policy

I expect you to attend all scheduled class meetings. If you know you are going to be late or need to leave early for some reason, let me know in advance via email. If you have not contacted me about missing a class or being late prior to that class period, you will not earn participation points on that day. If you join the zoom class without prior approval, you will also not earn participation points on that day. **Late work will not be accepted and there will be no make-up quizzes without my approval in advance**. I strongly encourage you to reach out to me early if issues arise throughout the semester so that I can work with you to come up with a plan.

Academic Integrity

Any student who engages in academic dishonesty (e.g. cheating, plagiarism, fabrication, and facilitating academic dishonesty) will receive a failing grade on the assignment. In addition, I will be required to submit a Violation of Academic Integrity Report, with the possibility of the student facing more serious punishments (e.g. suspension, expulsion). I strongly encourage you to familiarize yourself with the Undergraduate Academic Regulations: www.albany.edu/undergraduate_bulletin/regulations.html.

Online Expectations

All students are expected to observe courteous and appropriate forms of communication and interaction of the internet (within your online course). This means that there should be no personal attacks, obscene language or intolerant expression during online assignments and discussions. All viewpoints should be respected.

Classroom Health and Safety

At the University at Albany, supporting the health and safety of all members of our campus community is a top priority. To ensure that each of us has a healthy and safe learning experience within courses that involve in-person contact, all students, faculty members, staff and visitors are required to adhere to the expectations outline on the Health & Safety page of the University's COVID-19 website: https://www.albany.edu/covid-19/health-safety.

Absence Policy

In-class participation occurs frequently in this course and is included as part of your grade. For this reason, I strongly encourage you to attend class unless it is not possible to do so. For medical absences, please refer to the University's Medical Excuse Policy. New York State Education Law Section 224-A states that campuses are required to excuse, without penalty, individual students absent because of religious beliefs, and to provide equivalent opportunities for make-up examinations, study, or work requirements missed because of such absences. Dr. Murty will work directly with students to accommodate absences. Students must notify the instructors in a timely manner prior to the absence.

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counsel/assets/Sexual_Harassment_Policy_and_Procedures_Revised_6-20014.pdf), please review them.

Reasonable Accommodations

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and/or mental health (psychiatric) disabilities.
If you believe you have a disability and require accommodation in this class, please register with Disability Access and Inclusion Student Services (DAISS). You can contact DAISS at daiss@albany.edu, 518-442-5501 or albany.edu/dean-students/disability. Once you have registered with DAISS, they will provide you with an accommodation letter that you can send to your instructors to receive your approved accommodation.

Student Grievances

A student who seeks to dispute a grade or evaluation must initially pursue the matter directly with the faculty member involved. If not satisfactorily resolved directly with the faculty member, a written grievance may be filed with the program/department, or directly with school/college for units that are not departmentalized. Should the grievance not be satisfactorily resolved at this initial level of review, students may pursue further consideration of the grievance at the next organizational level until such time as the grievance is considered at the University Level by the GAC or UAC CAAS, as appropriate. For further information: www.albany.edu/undergraduate_bulletin/regulations.html

Tentative Lecture Schedule and Outlines						
Week	**Dates**	**Topic**	**Readings/Videos**	**Online Quiz**	**Forum**	**Assignments/Campus Tours**
Week 1	Jan 18-20	Introduction to Sustainability Energy Overview	Course BB Textbook Ch. 1.1-1.2, 1.4-1.7	X	X	
Week 2	Jan 23-27	Coal and Climate Change	Course BB Textbook Ch. 1.3, 2, 5.2, 11.3, 11.8	X		Problem Set 1
Week 3	Jan 30 - Feb 3	Efficiency & Natural Gas Nuclear Energy	Course BB Textbook Ch. 2.2, 5.4, 11	X	X	*Group Project Released* Personal Carbon Footprint **Central Plant Tour 2/3**
Week 4	Feb 6-10	Geothermal Energy	Course BB Textbook Ch. 10	X		**ETEC Tour 2/10**
Week 5	Feb 13-17	Solar Photovoltaic Energy	Course BB Textbook Ch. 4	X		Problem Set 2 Project Proposals due 2/13
Week 6	Feb 20-24	Solar Thermal Energy	Course BB Textbook Ch. 3	X	X	**Solar PV/Massry Tour 2/20**
Week 7	Feb 27 – Mar 3	Writing Skills & Peer Review	Course BB Readings posted on BB			February Synopsis due
Week 8	Mar 6-10	Wind Energy	Course BB Textbook Ch. 8			Group Project Draft Due 3/10
Week 9	Mar 13-17	Spring Break	None			None
Week 10	Mar 20-24	Hydroelectricity	Course BB Textbook Ch. 10	X		Problem Set 3
Week 11	Mar 27-31	Tidal Energy	Course BB Textbook Ch. 6	X		March Synopsis due
Week 12	Apr 3-7	Wave Energy	Course BB Textbook Ch. 7	X	X	
Week 13	Apr 10-14	Transportation	Course BB Textbook Ch. 9	X		Final Group Project Due 4/10
Week 14	Apr 17-21	Bioenergy	Course BB Textbook Ch. 5	X		Problem Set 4 Peer Review Due 4/21
Week 15	Apr 24-28	Renewable Energy Future Group presentations	Course BB Textbook Ch. 12		X	April Synopsis due
Week 16	May 1	Group Presentations				

Schedule Notes

Quizzes: Released at 12pm on Sundays. Available until noon on Mondays. Once you start the quiz, you have 30 minutes to complete.

Forums: Released at noon on Monday. Initial posts due at noon on Friday. Peer Responses due at 11:59pm on Sunday.

Problem Sets: Released on noon on Monday. Due at 11:59pm on Tuesday of the *following* week (8 days later).

Monthly Synopses: Released on the first day of the month. Due at 11:59pm on the last day of the month.

Ocean Science
ENV 302 (3 credits)
Syllabus - Fall 2022

Meeting Time: MW 4:30-5:50 pm
Meeting Location: ETEC 480 (Class No. 9218)

Instructor: Dr. Sujata Murty, Office: ETEC 429
Email: smurty@albany.edu
Virtual office hours: 1-3pm Wednesdays or by appointment

TA: Ian Plummer, Office: ETEC 426
Email: iplummer@albany.edu
Virtual office hours: 10-11am Tuesdays

Course Description

The ocean is a key component of the Earth system. This course offers an introduction to ocean science, and the role of the oceans in physical, climatic, chemical, and biological aspects of the Earth system. The course will provide a description of the properties, dynamics, thermodynamics, and processes of oceans that contribute to the formation of ocean circulations, eddies and waves, the transport of heat and freshwater, and the regulation of weather, climate and marine ecosystems. This course will also cover some interdisciplinary aspects of the oceans, such as El Niño, global warming, the carbon cycle, and energy. Prerequisites include A ATM 210; A CHM 120 or 130 or T 130; A MAT 111 or 112 or 118; A PHY 140 or T PHY 141.

Course Objectives

The oceans cover more than 70% of Earth's surface and yet remain largely unexplored and poorly understood. The course objectives are to:

1. understand the basic chemical, geological, physical and biological features and processes of the oceans;
2. discuss how oceans modify climate and heat distribution on Earth and affect global environments;
3. analyze and evaluate maps, photographs, cross-sections, graphs and other data;
4. develop both qualitative and quantitative observational skills;
5. examine the environmental issues concerning marine resources and ecosystems;
6. explain characteristics of marine life and controls on the marine trophic web.

Required Textbook and Other Materials

1. The **required textbook** for this course is *Oceanography: An Invitation to Marine Science* by T.S Garrison and R. Ellis (10th ed., 2022). The textbook is available at the University Bookstore and www.Cengage.com.

2. We will use **iClicker** in this course, a cloud-based software system that can be accessed from your mobile device or through a web browser. Be prepared to use iClicker for every class, as it will be used to assess your class participation (but not to grade for correct responses!). See instructions on Blackboard to register and link your account with this class.

3. Additional reading material and data resources will be available through Blackboard.

Assessments

Grades will be determined based on *participation in class* (iClicker and other activities), a few *homework assignments*, *two exams*, a *final project/presentation*, and *weekly quizzes*.

20%	Exam 1	20%	Final Project/Presentation
20%	Exam 2	10%	Weekly Quizzes
20%	Assignments	10%	Participation

Exams: Two in-class exams will occur throughout the semester and will cover all material covered up to that point in the semester. Expect a combination of short answer, essay and data interpretation questions. These exams will be closed book and no notes will be allowed. A study session will be scheduled before each exam with the instructor or TA.

Assignments: Various tasks involving numerical calculations, data research, etc. will be assigned throughout this course in which you will quantitatively assess and compare the chemical, biological, physical and geological data from the oceans. **You are allowed to work in groups as long as you write your answers in your own words and make your own figures**. All work must be shown to receive full credit.

Weekly Quizzes: There will be 10 weekly quizzes assigned through Blackboard in this course related to the material taught each week in class. These 30-minute quizzes are meant to be a way for you to check your progress and preparedness for each exam. You will be able to re-take each quiz once without penalty if you are unhappy with your grade, but the questions will be different each time. Quizzes will open at 12pm on Friday and close at 9am on Monday. **You may not work together on these quizzes**.

Final Project/Presentation: Each student will independently complete a final research project, including writing a short report and giving an in-class presentation. Expectations and grading rubrics will be distributed throughout the semester.

Participation: iClicker will be used in this class. Oceanographic issues are complex and often require consideration of scientific, political, economic and societal perspectives. We will use iClicker as a way for everybody to discuss and reflect on these complexities. I only allow participation with the iClicker Student app, so you are required to use a smartphone, tablet or laptop during our lectures. It is your responsibility to set up your iClicker Student account in a timely fashion. See the iClicker Expectations and Setup Instructions on Blackboard for more information. Note that iClicker answers will not be graded for accuracy, but students will receive 1 participation point per question answered. The three lowest daily totals will not be included in the final grade to allow for unexpected issues.

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Tentative Lecture Schedule and Assignments					
Week	**Dates**	**Topic**	**Readings**	**Online Quiz**	**Assignments**
Week 1	Aug 22 Aug 24	Introduction to oceanography Plate tectonics	Ch 2.3-2.5, appendix 3 & 4 Chapter 3.7-3.10, appendix 2	X	Download Microsoft Word & Excel Homework 1 (due Sep 7)
Week 2	Aug 29 Aug 31	Ocean basins Sediments and paleoceanography	Chapter 4 (all), appendix 9 Chapter 5 (all)	X	
Week 3	Sep 5 Sep 7	**No class on Sep 5** Physical properties of seawater	 Chapter 6 (all)	X	Homework 2 (due Sep 21)
Week 4	Sep 12 Sep 14	Atmospheric circulation Surface ocean circulation	Chapter 8.1-8.4 Chapter 9.1-9.4	X	
Week 5	Sep 19 Sep 21	Forces and geostrophic motion Deep ocean circulation	Ocean Circulation (Ch 3.3-3.4) 9.6	X	*Water parcel project released Sep 21* Homework 3 (due Sep 28)
Week 6	Sep 26 Sep 28	ENSO Waves	Chapter 9.5 Chapter 10.1-10.7		Project proposals due Sep 28
Week 7	Oct 3 Oct 5	Tides Exam 1	Chapter 11.1-11.4		
Week 8	Oct 10 Oct 12	**No class on Oct 10** Coasts and estuaries	 Chapter 12.1-12.5	X	Homework 4 (due Oct 26)
Week 9	Oct 17 Oct 19	Ocean chemistry Gas exchange	Chapter 7.1-7.2 Chapter 7.3	X	Project progress reports due Oct 17
Week 10	Oct 24 Oct 26	Carbonate system and alkalinity Nutrients and productivity	Chapter 7.4 Chapter 14.1-14.6	X	Homework 5 (due Nov 9)
Week 11	Oct 31 Nov 2	Marine communities - surface Marine communities – deep sea	Chapter 16.1-16.5 Chapter 16.6-16.7	X	
Week 12	Nov 7 Nov 9	The oceans and climate change Sea level	Ruddiman, pp. 137-146 Chapter 18.4-18.6	X	
Week 13	Nov 14 Nov 16	Marine resources & fisheries Pollution	Chapter 17.1-17.4 Chapter 18.1-18.3		Draft of project report due Nov 14
Week 14	Nov 21 Nov 23	Exam 2 **No class on Nov. 23**			
Week 15	Nov 28 Nov 30	Presentations Presentations			
Week 16	Dec 5	Presentations			Final project report due Dec 5

A ENV 404: *The Adirondack Environment*

Fall 2022
3 credits
Class number 9222

Lectures:

M W F: 10:35-11:30 am
ETEC 480

Course webpage:

https://blackboard.albany.edu/webapps/blackboard/content/listContent.jsp?course_id=_166734_1&content_id=_6951087_1&mode=reset

Instructor

Justin Minder
Associate Professor
ETEC 498A
(518) 437 3732
jminder@albany.edu

Office hours:

Tu, 9:30–10:00 am
Th, 9:30–10:30 am
Fr, 12:30–1:00 pm

Communication Options & Expectations

For general course questions, you are encouraged to:

- Ask a question in class
- Post to the **Ask a Question Forum** on our class discussion board
- Email the instructor

You are also strongly encouraged to attend office hours when you have questions about understanding the course materials. You may attend office hours in two ways:

- Using the **Zoom Meetings** link on the course Blackboard page
- In-person, in ETEC 498A

For technical problems with Blackboard, you can use the **Blackboard Help** link on the left side of the class webpage.

I will send out announcements to your @ualbany.edu email and the **Announcements** page (link on the left). **Please make sure you are checking at least one of these daily.**

You can generally expect a response to emails or forum questions within one business day.

Description

An interdisciplinary survey of environmental science topics using New York's Adirondack Mountains as an example. Topics range from aspects of the natural environment to human-environment interactions. Specific topics include: regional geology and geomorphology, impacts of acid rain and air quality regulation, forestry and mining practices, ecosystem changes and management, environmental conservation of the Adirondack park, impacts of climate change.

Learning objectives

By the end of the course students should be able to:

- Explain how the geological, climatological, ecological, and human history of the Adirondacks combined to shape its current environment.
- Obtain and complete basic analyses of data on key aspects of the Adirondack environment.
- Discuss how key agencies, laws, and policies that manage today's Adirondack environment, and summarize how different stakeholders might view these, depending on their value judgements.
- Effectively identify, collect, synthesize, and communicate information about multi-faceted environmental issues facing the Adirondacks (and other regions).

Course outline

The physical environment

- *Geology, geomorphology, soils, hydrology, weather, climate*

The living environment

- *Ecology, vegetation, wildlife*

The human dimension

- *History, resources, wilderness, demographics, environmental management*

Major environmental issues

- *Acid rain, pollution, invasive species, climate change*

Final research papers / presentations

- A deep dive into a topic of your choice

Prerequisites

AENV 221 & AATM 210 or permission of the instructor

Texts

The Adirondacks: A History of America's First Wilderness, Paul Schneider, (1998)
The Adirondack Atlas: A Geographic Portrait of the Adirondack Park, Jerry Jenkins, (2004)

Grading

Grading will be on the A-E scale with the following weights:

a. Homework	% 30
b. Forum posts & in-class activities *(lowest grade dropped)*	% 15
c. Quizzes *(lowest grade dropped)*	% 10
d. Final project & presentation	% 45

a. Homework will be assigned about every 1-2 weeks and will vary in length and style.
b. Forum posts & class activities will involve short assignments during or outside of class to solicit student opinions, elaborate content, or solidify understanding. One field trip is also planned.
c. Quizzes will be short and are designed to be easy for students that have completed the assigned reading or viewing materials.
d. Final project & presentation will be a multi-week extended project on the topic of a student's choosing. Students will complete a paper and give a presentation at the end of the semester.

Expectations

General conduct

- Students are expected to abide by the Student Code of Conduct at all times: https://www.albany.edu/studentconduct/community_rights_and_responsibilities.php
- Students should also be aware of campus policies on Violence Prevention and Sexual Harassment:
  - https://www.albany.edu/hr/assets/Campus_Violence_Prevention.pdf
  - https://www.albany.edu/equity-compliance/title-ix-sexual-misconduct
- There is an expectation of **professional and respectful behavior** in class, on the discussion forums, and all other aspects of the course. Civil disagreement is welcome, but differing viewpoints should be respected. No personal attacks, obscene language, or intolerant expression will be allowed.

Writing

- All writing done for the course, whether in homework assignments, discussion forum posts, or final projects must be in standard English with good grammar. Your responses

should always be coherent and well-written. Make sure to proofread your work before submitting!
- For help with writing, you are encouraged to reach out to me or take advantage of on campus resources (https://www.albany.edu/writing/)

Accommodations

- **If you have a documented disability** and may require some accommodation or modification in procedures, class activity, instruction, etc., **please contact me early in the semester** so I can best address your needs**.**
- If you need forms or information, please visit: http://www.albany.edu/disability/index.shtml

Academic Integrity

- **Students are expected to turn in their own original work.** Group collaboration on homework is acceptable, but you must write up your own assignments and check your work independently. **If your work is not independent, no credit will be given.**
- University "Standards of Academic Integrity" apply & will be enforced: http://www.albany.edu/undergraduate_bulletin/regulations.html
- **If I find evidence of a violation of these policies, you will be reported to the university** and, at minimum, receive a zero on the assignment. Severe cases can result in more drastic consequences.

Excuses

- **Assignments are due at the beginning of class on the due date. For any major conflicts** (significant illness, family emergencies, medical appointments, etc.), **contact me as soon as possible.** I will then make alternate arrangements with you.
- **If an extension is not arranged ahead of time, 25% will be deducted for each business day of lateness on homework or project, and zeros given for missed quizzes**. The only exceptions are the following: a physician's note, a note from the Dean's office, or a legal summons.
- The official university policies on absences, medical excuses, and religious accommodations can be found here:
    - https://www.albany.edu/undergraduateeducation/92002.php
    - http://www.albany.edu/health_center/medicalexcuse.shtml
    - https://www.nysenate.gov/legislation/laws/EDN/224-A

Advice for success

- Your active participation in lectures is one of the primary ways you can enrich your education. **Come to class prepared to answer and ask questions**. This will make the class more worthwhile for everyone.
- If a concept or method is unclear to you be sure to **take advantage of office hours**.
- **Start assignments early** so you have time to get help if needed. The final project will involve sustained effort over multiple weeks to earn a high grade.
- **Homework assignments should show neat, detailed, organized work with a logical progression.** Answers must be clearly denoted and include proper units.
- Routine readings will be assigned, both from the text and supporting documents. You will generally find these most useful if you **do the readings before class** to familiarize yourself with the material and come up with questions to ask during lecture.

Mental Health

- The University at Albany Counseling and Psychological Services (CAPS) provides free, confidential services including individual and group psychological counseling and evaluation for emotional, social, and academic concerns. Students may consult with CAPS staff remotely by telephone, email or Zoom appointments. For questions or to make an appointment, call (518) 442-5800 or email consultation@albany.edu. Visit www.albany.edu/caps/ for hours of operation and additional information.
- If your life or someone else's life is in danger, please call 911. If you are in a crisis and need help right away, please call or text the National Suicide Prevention Lifeline at 988.
    - https://988lifeline.org
- Students dealing with heightened feelings of sadness or hopelessness, increased anxiety, or thoughts of suicide may also text "HOME" to 741741 (Crisis Text Line).
    - https://www.albany.edu/counseling_center/emergency.shtml

Syllabus: Paleoclimatology - Fall 2019

Course: Env 450 (3 credits), class number 9135
Course: ATM 550 (3 credits), cross-listed graduate class 9134

Class Schedule:
Tuesday & Thursday 2:45 - 4:05 pm, Room ES 328

Instructor: Dr. Mathias Vuille, office: ES 311,
phone: 442-4472
E-mail: mvuille@albany.edu
Office hours; Monday 1 – 3 pm, or by appointment

Objectives and Goals:

This class is designed to introduce students to the diverse field of paleoclimatology and climatic reconstruction. The class will specifically focus on the use of natural archives (ice cores, tree rings, corals, cave deposits, etc.,) to reconstruct environmental, climatic and atmospheric change over a range of time scales. The primary time scales of interest will be the Holocene, and the past 1000 years, but we will also examine some longer reconstructions spanning the late Pleistocene. In the process we will cover a range of topics in lecture that will provide an introduction to natural climatic forcings and variability, age dating techniques, statistical analysis, climatic proxies (natural archives), and paleoclimatic reconstruction techniques.

Reading and Study Materials:

(1) There is **no textbook** required, but we will rely quite heavily on material from several books:

- Paleoclimatology; Reconstructing Climates of the Quaternary, R. S. Bradley, Academic Press, 3rd Edition, 2014.

- Paleoclimates - Understanding Climate Change Past and Present, Thomas M. Cronin, Columbia University Press, 2009

- Earth's Climate – Past and Future, W.F. Ruddiman, W.H. Freeman and Company, 2001

(2) We will read and discuss **scientific articles** (to be handed out or distributed via website by the instructor)

Topics (not necessarily covered in this order)

-Introduction to paleoclimatology
-Sources of paleoclimatic/ paleoenvironmental Information
-Modern modes of climate variability
-Statistical methods of climate analysis
-Dating Methods: (annually resolved records, ^{14}C, U-series, biological methods, etc.)

-Age model construction, time-series development
-Introduction to paleoclimatic proxies (stable isotopes, trace metals, micropaleontology etc.)
-Ice cores
-Corals
-Dendroclimatology (tree rings)
-Speleothems (cave deposits)
-Lacustrine deposits (lake sediments)
-Marine sediments and foraminifera
-Pollen and other biologic proxies
-Glacial records (moraine dating)
-Historical data

Prerequisite class work: Introductory Chemistry, Physics and Earth Science

Grading
Grades will be determined based on *participation in class* (especially during discussion of assigned readings), a few *homework assignments*, *three exams*, an *oral presentation*, and the *writing of a review paper* (required for ATM 550 only). Exams will cover both material discussed in lectures and during paper discussions.

Env 450

20%	Exam 1 (Tue. Sept. 24)
20%	Exam 2 (Thu. Oct. 24)
25%	Exam 3 (Mon. 16. Dec. – during Final exam period)
15%	Constructive Class participation / Homework Assignments
20%	Oral presentation

Atm 550

15%	Exam 1 (Tue. Sept. 24)
15%	Exam 2 (Thu. Oct. 24)
20%	Exam 3 (Mon. 16. Dec. – during Final exam period)
25%	Review Paper due at the end of the semester
10%	Constructive Class participation / Homework Assignments
15%	Oral presentation

Class participation:
We will read papers on an almost weekly basis. Students will be asked to summarize the main findings and methods of the paper and lead the discussion by asking questions regarding methods/findings of the paper or aspects that were unclear or difficult to understand.

Oral Presentations:
Each student is required to work on a selected topic of his/her choice and present a short (~12 - 15 min.) talk to the rest of the class in the last few weeks of the semester.

Review paper:
For students enrolled in ATM 550 this class includes a writing assignment. The goal is to choose a scientific topic or issue relevant to this class and present a detailed review of the

current "thinking" or knowledge about this topic. This can include an outline of how the field, its methods or a specific paleoclimatic hypothesis has evolved over time. You will need to gather original scientific papers on the topic and critique them. The final paper should include approximately 10-15 pages of text, followed by a detailed reference list. I am available to help select an appropriate topic and I will be available to discuss the papers you have found on your chosen subject. There is no need to hand in an outline, but you can submit a draft outline of the paper to receive comments.

The final paper is due **Friday, December 13, 2019**, by midnight.

The following is a list of potential paper topics, although I encourage student-initiated topics:

1. Review of a paleoclimatic proxy (for example; $\delta^{18}O$ in ice or speleothems, Sr/Ca in carbonates, tree rings etc.)
2. Reconstructing the past behavior of a mode of climate variability (e.g. El Niño)
3. Evidence for, and possible sources of, decadal climate variability
4. Solar or volcanic influences on climate
5. Past variations in the thermohaline circulation
6. The history of drought in the western United States or other particular regions
7. Reconstructions of monsoon variability
8. Discuss the utility of a particular paleoclimatic archive, including history, success, and uncertainties (i.e. corals, ice cores, marine sediments, etc).
9. Paleoclimatic evidence for Intertropical Convergence Zone (ITCZ) variability
10. Past climate variations and their influence on human civilizations

COIL Informed Consent

This course is COIL-enhanced. COIL stands for Collaborative Online International Learning, which is SUNY's pioneering path to making global experiences accessible to more students. COIL activities will include engaging online with other instructors from inside and outside of the U.S.A.! By remaining enrolled in this course, you are agreeing to COIL. If you have any questions or concerns, please speak with your instructor ASAP.

https://www.albany.edu/international/COIL.php
https://innovate.suny.edu/introtocoil/

TENTATIVE SCHEDULE:

The schedule is approximate and subject to change. It will be adjusted and evolve as the class progresses.

WEEK	STYLE	TOPIC	COMMENTS	READING ASSIGNMENTS
Week 1 (08/27, 8/29)	Lecture / Movie / COIL	Introduction to course / Movie 'Chasing Traces Past' / Intro to Paleoclimate research	COIL via Univ of Mass. (Prof Bradley)	None
Week 2 (09/03, 09/05)	Lecture	Climate variability / forcings & feedbacks / Orbital forcing /		IPCC AR5, (2013) WG1, p. 392-393; Ruddiman (2005) p.25-45
Week 3 (09/10, 09/12)	Lecture	Statistical considerations / Dating methods		Walker (2012)
Week 4 (09/17/09/19)	Lecture / Lab	Dendroclimatology	Hands-on outdoor activity	Ault & St. George (2018)
Week 5 (09/24, 9/26)	Exam / Lecture	Stable H, O isotopes	Exam I (9/24)	Prepare for exam Ruddiman (2001) p. 150-154
Week 6 (10/01, 10/03)	COIL / Movie	Speleothems / Movie 'Taking earth's temperature'	COIL via Univ. Sao Paulo (Prof Cruz)	Cruz et al. (2005)
Week 7 (10/08, 10/10)	Lecture	Polar ice cores / Tropical ice cores		Alley (2000) p. 59-79; 99-108
Week 8 (10/17)	Lecture	Abrupt climate change / Heinrich events		TBD
Week 9 (10/22, 10/24)	Lecture / Exam	Borehole temperatures / Noble gas paleothermometry / Moraine dating	Exam II (10/24)	Prepare for exam
Week 10 (10/29, 10/31)	Lecture	ELA reconstruction / Lacustrine records		Besonen et al. (2008)
Week 11 (11/05, 11/07)	Lecture / COIL	Sea level history / Marine sediments / SST reconstructions / Foraminifera / Alkenones / Tex86 / Corals / Mg/Ca / Sr/Ca, -	COIL via Univ. Bremen (Prof Chiessi)	Cornwall (2015) Chiessi et al. (2015)
Week 12 (11/12, 11/14)	Lecture / COIL	Pollen, packrat middens & other biologic proxies / Paleoclimate modeling	COIL via Univ. at Albany (Prof Vuille)	TBD
Week 13 (11/19, 11/21)	Lecture / Student presentations	Historical & Documentary data	Start of student presentations on 11/21	NAS (2006) Prepare your presentation
Week 14 (11/26)	Student presentations	TBD		Prepare your presentation
Week 15 (12/03, 12/05)	Student presentations	TBD	Exam III (12/16 @ 1-3 pm) Final paper due on12/13	Prepare your presentation – Write your paper

AENV 480 SPRING 2023

SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE - CONSERVATION BIOLOGY

As an introduction to the discipline of conservation biology, the course will provide students with an overview of patterns of biodiversity, causes and consequences of biodiversity loss, and approaches for protecting, maintaining, and restoring biodiversity across biological (genes to ecosystem) and geographical (local to global) scales. The course will focus on the application of biological sciences (ecology, evolution, genetics, and biogeography) to biodiversity conservation but also will cover human dimensions (social, economic, and political) of this issue. 3 Credits.

Class time and location: TTh 4:30–5:50 PM, ETEC 482

Instructor: Steven P. Campbell, Ph.D.
Office: ETEC 418F
Email: spcampbell@albany.edu
Office Hours: TTh 3:00–4:00 PM or by appointment
Website: spcampbell.weebly.com

Required text: Hunter, M. L., Jr., J. P. Gibbs, and V. D. Popescu. 2021. Fundamentals of conservation biology, 4th edition. John Wiley & Sons, West Sussex, UK.

Course objectives: This course aims to provide students with the ability to:

- define biodiversity and describe its organization, measurement, and spatial patterns
- explain the threats to biodiversity and consequences of biodiversity loss
- identify linkages among conservation problems across biological (genes to landscapes) and geographical scales (local to global)
- understand how ecological and evolutionary principles underlie biodiversity and are applied to solving conservation problems
- articulate the responsibility that humans have as global land stewards
- demonstrate a greater understanding of conservation problems inside and outside the U.S. as well as cultural differences in perceptions of problems and appropriate solutions
- apply critical reasoning skills to assessment, analysis, and synthesis of conservation problems and solutions
- synthesize and discuss the findings of scientific papers

Teaching procedures: Course content will be conveyed through lectures, readings, and assignments. Students are expected to have completed the assigned readings before class so that they are prepared to participate in class discussions. This course has an associated Blackboard page on which class materials will be posted. PowerPoint slides relevant for the day's class will be posted on Blackboard before class begins.

Grading policy: The course will be graded on an A-E scale. The final grade will be determined by the combined performance in each of the following areas:

Exams - Exam I	15%
Exam II	15%
Final Exam	15%
Assignments	35%
Article review	10%
Participation	10%

Exams – Exams will cover content from all aspects of the course (i.e., lectures, readings, and assignments). Make-up exams will be given only to students who have made previous arrangements with the instructor or who present an adequate and documented reason for absence within 24 hours of the exam. Dates and formats of make-up exams will be at the instructor's discretion.

Assignments – Assignments are intended to give students "hands-on" experience and a more practical understanding of the concepts discussed in class. Assignments should be emailed to the instructor by midnight of the due date. Late assignments will be deducted 5 points a day up to a maximum of 30 points.

Article review – Students will be responsible for finding a recent peer-reviewed journal article on a topic relevant to the class, presenting it orally to the class, and leading a brief discussion. Students will schedule their presentations by signing up for a date on a sign-up form that will be available on Blackboard.

Participation – Participation consists of answering the instructor's questions, asking questions, and contributing positively to class discussions. As such, students will need to attend class to participate. Simply attending every class will not earn a student participation points (i.e., these are not "free" points). Students are not expected to always provide the "right" answer, but they should be able to discuss and synthesize the course material. Quality is more important than quantity – students who provide insightful comments will receive higher participation scores than vocal students whose comments have little substance.

Letters – Students have the option to write two letters for extra credit: one to the editor of a newspaper and one to an elected official. Each letter is worth up to 5 points that will be added to the scores for Exams I and II.

Examination schedule: Exam I – February 21
Exam II – March 30
Final Exam – May 10, 3:30 PM – 5:30 PM

Important dates: January 31 – Last day to drop course without receiving a "W"
April 3 – Last day to withdraw from course ("W" assigned) and last day to request S/U grading or return to A-E grading
May 2 – Last day of classes

Class policies:

Attendance – Attendance is strongly encouraged because exams and assignments will rely heavily on material covered in class and participation in class discussions is one of the criteria for grading. If an absence is expected due to a scheduled event or a religious observance, the student should give notice at least one week prior to missing class. If an absence is due to an emergency, the student should give notice within 24 hours of missing class. If a class is missed due to an unexcused absence, students are responsible for getting notes and other class material from Blackboard and their classmates.

Academic integrity – The University's undergraduate bulletin provides a detailed description of the expectations for the integrity of students' academic work, the penalties for violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process of addressing the violations (www.albany.edu/undergraduate_bulletin/regulations.html). Students are responsible for familiarizing themselves with the *Standards of Academic Integrity* and behaving accordingly. Student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity.

Students with disabilities – Students with disabilities that require academic accommodation should contact Disability Access and Inclusion Student Services (www.albany.edu/disability/) to get an academic accommodation letter indicating the need for and type of accommodation. After getting a letter, please make an appointment with the course instructor to discuss accommodations as soon as possible, as timely notice will help avoid a delay in receipt of accommodations.

Course calendar – The dates of exams and presentations and due dates for assignments and letters will be posted on a calendar in Blackboard. It is the student's responsibility to check the calendar so that they are prepared for class activities and are aware of due dates.

Syllabus changes – This syllabus serves as a general plan for the course. The instructor reserves the right to deviate from the plan if necessary. Students will be notified promptly of any modifications.

Electronic devices – Cell phones, tablets, and any other devices not being used as a learning aid should be turned off by the time class begins.

Contacting and meeting with the instructor: If students want to talk to the instructor individually, students should meet with the instructor during office hours or at the end of class. If that is not possible, email is the best way to contact the instructor outside of class for simple communications. (Allow 24 hours for a response.) If students have questions that require detailed explanations, students should contact the instructor to arrange a time for a face-to-face (in-person or Zoom) meeting.

Psychological health: If psychological distress is interfering with relationships, academics, work, or daily life, confidential support is available. Contact Counseling and Psychological Services (CAPS) at 518-442-5800 or consultation@albany.edu to schedule an appointment with a psychologist. The CAPS website (www.albany.edu/caps/) also contains self-help resources and other valuable information.

Suggestions for success:

1) Attend all classes. There is a very strong correlation between attendance and academic success.
2) Come to class prepared. Keep up with the readings to be able to actively participate in discussions.
3) Review the notes each day after class.
4) Spend a minimum of 6 hours per week on readings, assignments, and studying for this class. Keep in mind that the definition of a credit hour is based on the assumption that students are spending a minimum of two hours of time on work outside of class for every hour spent in the classroom.
5) Meet with the instructor as soon as possible if help is needed to understand an assignment or lecture material or if there are concerns about grades.

Course topics: The topics to be covered in class and their associated readings are below. The readings are from Hunter et al. (2021).

Topic	Readings[a]
Introduction	
Lessons from history	
What is conservation biology?	Pages 13–19
Biodiversity concepts, measurements, and patterns	
Biodiversity concepts	Pages 21–23
Measuring biodiversity	Pages 23–29
Spatial patterns of biodiversity	
Levels of biodiversity	
Species diversity	Chapter 3
Assignment 1 – What is biodiversity? Spiders as exemplars of the biodiversity concept	
Ecosystem diversity	Pages 67–79

Genetic diversity	Pages 90–109
Assignment 2 – Population genetics: Diversity within versus diversity among populations	
Threats to biodiversity	
Extinction	Pages 130–138, 150–152
Assignment 3 – Why is biodiversity important? Why is it threatened? An exploration with the IUCN “Red List” of threatened species	
Human population	
Assignment 4 – Population, consumption, or governance: which drive species imperilment most in Africa and Europe?	
Human activities	
Habitat loss and degradation	Pages 161–167, 179–182, 188–193, 195–222
Assignment 5 – Habitat loss and fragmentation: Edge effects, connectivity, and issues of scale	
Pollution	Pages 183–188, 193–195
Invasive species	Chapter 10
Overexploitation	Chapter 9
Assignment 6 – Life table analysis: Balancing commercial fisheries with sea bird “by-catch”	
Climate change	Pages 138–150
Assignment 7 – Population viability analysis: El Niño frequency and penguin population persistence	
Extinction processes in small populations	
Rarity and vulnerability	Pages 154–161
Environmental and demographic stochasticity	Pages 171–172
Allee effect	
Genetic bottlenecks, genetic drift, and inbreeding	Pages 109–117
Assignment 8 – Genetic drift: Establishing population management targets to limit loss of genetic diversity	
Maintaining Biodiversity	
Protecting Ecosystems	Chapter 11
Assignment 9 – Ecosystem fragmentation: patterns and consequences for biodiversity	
Managing Ecosystems	Chapter 12
Assignment 10 – Forest harvesting: balancing	

timber production and parrot habitat	
Managing Populations	Chapter 13
Human Factors	
Social Factors	Chapter 15
Economics	Chapter 16
Politics and action	Chapter 17
Assignment 11 – Overconsumption: Who's smarter… students or their professors?	

[a] Page numbers were derived from the e-book version of the text. The page numbers should be close to those of the print version but may not match exactly.

MAJOR TOPICS IN ENVIRONMENTAL SCIENCE

ENV-490 (CLASS# 8599): TUESDAY & THURSDAY 3:00PM – 4:20PM, ETEC 480

COURSE DESCRIPTION

This is a required course for environmental science majors in their senior year that brings together students from all concentrations (ecosystems, climate change, sustainability science and policy & geography) to address major topics in environmental science. This course will focus primarily on anthropogenic climate change ('global warming'), arguably one of the most important environmental issues of our time, and how it relates to the four environmental science concentrations climate change (radiation balance, paleoclimate, the carbon cycle, climate modeling), ecosystems (impacts of climate change on biodiversity, agriculture, the marine food web, vegetation shifts), sustainability science and policy (climate change policies, international treaties, perceptions of climate change, mitigation and adaptation) and geography (new energy technologies, future projections and emission scenarios, human health). The class consists of a mixture of lectures and student presentations. The first two thirds of the semester (weeks 1-12) will be based on lectures, assigned readings of relevant papers and book chapters, small modeling exercises, but also include discussions of current topics related to climate change. The semester ends with in-class group work and presentations of student research projects (weeks 13-15).

RESEARCH PROJECT

The research project represents the core of this course. It allows you to express your advanced knowledge and research on a pre-approved topic related to climate change. These projects have to include an in-depth literature review, if desired some original data analysis and a discussion. All students will have to provide a short research proposal half way through the semester and give a 10-15 minute oral presentation to the class (during the last 3 weeks of the semester) on their project. Evaluation will be based on effort, content, accuracy, and creativity. Every effort should be made for a concise presentation that demonstrates advanced knowledge of the selected topic.

LEARNING OUTCOMES & COURSE OB JECTIVES

The goal of this course is to encourage students to debate global climate change solutions actively and critically, both verbally and in writing. To achieve this goal, students have to work on a research project focused on 'climate solutions' throughout the semester, which includes writing a proposal and orally presenting their results to the class at the end of the semester. Students receive instructor feedback both on their written and oral contribution. A learning assessment is performed at the beginning and the end of the semester to track student progress and learning achievements.

CREDIT HOURS

This class meets for 160 minutes per week. Together with weekly homework assignments and the semester-long research project, it meets the required number of class minutes for the credit load.

INSTRUCTOR

Mathias Vuille
e-mail: mvuille@albany.edu
Phone: 442-4472
Office: ETEC 439
Office hours: by appointement

REQUIRED TEXTBOOK

David Archer (2011): Global warming – Understanding the Forecast. 2nd Edition. Wiley Publishing, 203 pp. (available at the University Bookstore).
In addition we will rely on material from the IPCC 6th Assessment report.
It is recommended to download the Summary for Policymakers of WG1:
https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf
All course material, including class lectures and papers will be made available on the course website at: http://www.atmos.albany.edu/daes/atmclasses/env490/index.html
To access the material you will need a username and a password, which will be handed out in the first class.

ASSIGNMENT REQUIREMENTS

- Weekly homework assignments (35% of overall course grade)
- Two Exams (25% each, of overall course grade)
- Oral presentation in class (15% of overall course grade)

GRADING SCALE (The course is graded A-E)

- 93-100: A
- 90-92: A-
- 87-89: B+
- 83-86: B
- 80-82: B-
- 77-79: C+
- 73-76: C
- 70-72: C-
- 67-69: D+
- 63-66: D
- 60-62: D-
- <60: E

PREREQUISITES

AATM 210 & AENV 315, or permission of the instructor.

DATES OF EXAMS, PROPOSAL AND PRESENTATION:

Thursday, March 2:	Mid-term Exam
Thursday, March 9:	Project proposals due
Thursday, April 20:	Start of oral presentations
Friday, May 7:	Final exam (3:30 - 5:30 pm)

ATTENDANCE POLICIES FOR THE CLASS:

I do not take attendance; students will be made aware at the beginning of the semester that historically in my classes there is a strong correlation between frequent absence and poor grades.

TOPICS LIST AND CLASS PLAN:

The schedule is approximate and subject to change. It may be adjusted and evolve as the class progresses.

WEEK	STYLE	TOPIC	COMMENTS	HOMEWORK ASSIGNMENTS (usually due Thursdays)
Week 1 (01/19)	Lecture	Course overview	Knowledge assessment	none
Week 2 (01/24, 01/26)	Lecture	Anthropogenic vs. natural change	Intro to Student projects	HW1: Archer Ch. 1/2, journal article
Week 3 (01/31, 02/02)	Lecture	The greenhouse effect, Global dimming		HW2: Archer Ch. 7/11
Week 4 (02/07, 02/09)	Lecture	Climate sensitivity & feedbacks, Carbon cycle, Abrupt climate change		HW3: Archer Ch. 3/4/8/9, journal article
Week 5 (02/14, 02/16)	Lecture	Climate modeling, Emissions & Emission scenarios		HW4: Archer Ch. 10, journal article
Week 6 (02/21, 02/23)	Lecture	Climate change projections, Intro to impacts, Climate extremes	Review Sheet I	HW5: Archer Ch. 11/12, journal article
Week 7 (20/28, 03/02)	Lecture, Exam	Heat waves, Tropical cyclones	Exam I (03/02)	No HW – study for exam
Week 8 (03/07, 03/09)	Lecture	Arctic sea-ice, Ice sheets, Sea level rise	Project proposal due (03/09)	HW6: Project proposals
Week 9 (03/14, 03/16)	No class	Spring Break		
Week 10 (03/21, 03/23)	Lecture	Alpine glaciers, Permafrost, Natural hazards		HW7: journal articles
Week 11 (03/28, 03/30)	Lecture	Snow & water resources, Agriculture, Terrestrial ecosystems		HW8: Archer Ch.13
Week 12 (04/04, 04/06)	Lecture	Marine biodiversity, Human health, Adaptation, Mitigation		HW9: journal articles
Week 13 (04/11, 04/13)	Lecture, Group work	Geoengineering, Energy solutions, 'The wedge game'		HW10: Text on stabilization wedges
Week 14 (04/18, 04/20)	Lecture, Student presentations	International, US and NYS climate policy, Climate solutions	Knowledge reassessment, Student presentations start on 04/20	HW11: journal articles
Week 15 (04/25, 04/27)	Student presentations	Climate solutions		none
Week 16 (05/02)	Student presentations	Climate solutions	Review Sheet II	HW12: presentation summaries
(5/07)	Final exam		Exam on 05/07 (3:30-5:30 pm)	

Syllabus: AENV 496

Environmental Internships

Course Description: Provides students with practical work experience in environmental science through placements with federal, state, or local government agencies, or private firms. The supervisor's reference, a mid-internship and a final report are required. Internships are open to qualified juniors and seniors with a GPA of at least 2.50 overall and in the Environmental Science major. A maximum of 3 credits may be applied toward the major. May be repeated once for credit.

Number of Credits: 1-3

Professor's Office Hours - By appointment

Prerequisite(s): Permission of department internship coordinator. Open only to juniors and seniors with a GPA of at least 2.50 overall and in the Environmental Science major.

Learning Outcomes or Course Objectives: The specific learning outcomes will depend on the host institution but they are meant to provide the student with a hands-on learning experience related to an environmental science topic at a government agency or a private firm under the mentorship and guidance of a an authorized external supervisor approved by the department.

Assignments and % of grade each assignment has towards overall course grade: This course is *S/U* graded. Grade is based on supervisor's written reference and assessment of student performance (50%), a mid-internship report (20%) and a final report (30%).

Course Outline/Topics: Course outline and topic are determined by the internship supervisor at the host location, in consultation with the department internship coordinator. The student will meet with the department internship coordinator at the beginning and at the end of the internship and needs to submit both a mid-internship and a final report.

Intro to Urban Geography

University at Albany, Spring 2019
Course Number: AGOG / ASUS 220
Days: Mondays & Wednesdays
Time: 5:45 – 7:05PM
Room: LC15
Instructor: Dr. David A. Banks
Email: dbanks@albany.edu
Office Hours: Mondays 4:00-5:30 PM & By appointment. Room AS 212
Credit hours: 3
Pre-requisites: None

Course Description:
Geography studies the spatial dimensions of society and culture. This course will explore the challenges and opportunities of living in cities. Major themes include: history of urban form; spatial structure of modern urban systems; and the internal structure of the city, emphasizing social and economic patterns.

The Important Parts

- No late assignments. Everything is turned in by 11:59PM on the day that it is due via email to dbanks@albany.edu. No Google drive links. Only file attachments will be accepted.
- Come to class having consumed the assigned media listed on the syllabus for that day.
- Come to class with an Internet-accessible device that you can do substantial document editing on.
- You are allowed 3 absences, no documentation required. Every absence above 3 is a 5% deduction from your final course grade. If you miss a class with in-class assignments the standard make-up assignment is a 300-500 word reflection on that day's assigned media due by next class.

Purchases for this class

Required: A pack of ***3" x 5"*** index cards, at least one per class. Color or ruled does not matter but dimensions do.
Optional: All required media are provided to you for free. However, if you are a geography, urban studies, or planning major I recommend you purchase *Key Concepts in Urban Studies*, 2nd Edition by Mark Gottdiener, Leslie Budd, and Panu Lehtovuori. This text has concise chapters about key concepts that you will find helpful in this class and others.

What to Bring to Every Class Meeting

- A 3x5 note card
- The course material assigned for that day as listed on the syllabus. (This can be printed out, or on a computer/device.)
- Something to take in-class notes with. This can be a device or pen and paper but please be attentive in class.

My Expectations of You

Everyone should come to class having read, listened to, or watched what was assigned for that day. There will be times when the material gets dense and confusing, you should make an honest effort to slog through it. **Even if it feels like you are not retaining anything keep going.** Doing so helps you develop advanced reading and comprehension skills that will be necessary for college and beyond.

If I get the sense that too few people are coming prepared for in-class discussion and assignments I will issue a pop quiz.

I also expect you to treat each other with kindness and generosity. Specifically, that means respecting the tools of the humanities and qualitative social sciences: argument, debate, and

synthetic thinking. If you think someone is saying something uninformed, please give that person the benefit of the doubt and we will learn together. More egregious and repeated failures to be a conscientious class participant may be grounds for an office hours meeting.

Attendance Policy

Class attendance is mandatory for a passing grade. Attendance is taken using the note cards you are required to purchase. At the beginning of every class I will write a question on the board and you will put your name, the date and the answer on your note card. This filled-out note card is proof that you attended class. (And participated, see participation grade section below.) If you forget to turn it in and you want to prove that you attended class I will ask for your notes or work from that day.
You may miss three classes, no paperwork or explanation needed. If you expect to miss several classes because of sports, health conditions, work, family, or some other prior obligation, please come to me as soon as possible with some paperwork to show this. Missing more than three classes without showing me some sort of formal paperwork result in 5% off your final course grade per missed class. If you miss a Wednesday class between weeks 5 and 14 and therefore miss the in-class group assignment your standard make-up assignment is a 300-500 word summary, in your own words, of the assigned media for that day listed in the course schedule. Make-up assignments are always due by the next class.
I may mark you absent, without telling you, if you fall asleep in class. If you feel tired or sick do not come to class. If you feel tired or sick in the middle of class, leave and come back if/when you are alert and attentive. Please also see the Standard University Medical Excuse Policy below.

Standard University Medical Excuse Policy

In accordance with the *Undergraduate Academic Council's Revised Policies on Student Absences* Student Health Services will only provide medical excuses to students for medical conditions that prevent a student from attending an exam or a full week of classes and meet the following conditions:

A Student Health Services provider is involved in the medical care;
AND
The condition is deemed significant by a medical provider in Student Health Services;
AND
Based on examination by a Student Health Services provider, the student is advised not to attend class.
OR
The student has proof of a documented hospitalization

In general, the following conditions will NOT warrant a medical excuse:

- A request for a medical excuse from Student Health Services for verification of an illness after the illness is over.
- You miss class or an exam for an appointment at Student Health Services.
- A respiratory infection without significant fever.
- Gastroenteritis (vomiting / diarrhea, unless there is fever and/or severe dehydration).
- Musculoskeletal conditions which do not prevent ambulation (such as minor ankle injuries, wrist sprains, etc.)

Students are encouraged to communicate directly with faculty regarding class attendance and/or completion of class assignments when the illness or injury does not meet the criteria outlined above.

Accommodations

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518-442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with

a disability registered with the DRC and list the recommended reasonable accommodations.

Assignments

All assignments are due by 11;59PM on the due date listed in the course schedule. Everything should be turned in as a file attachment in an email sent to dbanks@albany.edu. **NO GOOGLE DRIVE LINKS. PLEASE EXPORT TO A .DOCX FILE.**

Grading Scheme

- 20% Class Participation
- 20% Thesis Log
- 20% In-class assignments & any pop quizzes that might happen.
- 25% Concept & Film Essays
- 15% Scavenger Hunt Final

Class Participation

I keep track of participation by collecting note cards throughout class. I will pick up your note card and mark you down as having participated if you do any of the following:

- Asking or answering questions during lecture.
- Volunteering to be the person that reports back to the rest of class for in-class group assignments.
- Speaking up during smaller group discussions while I am present.

If I collect your notecard four times over the course of the semester you get full credit for class participation. Class participation grades will be updated in Blackboard at the same time as Thesis Logs but you can ask me for your participation grade at any time. Note: all notecards are to be turned in at the very end of class for attendance purposes.

Thesis Log

For each reading with three asterisks (***) in the course schedule you are expected to write a sentence or two **in your own words** that encapsulates the thesis (the main argument or idea) of the reading. This thesis must be accompanied by two quotes from the reading that you believe are central to the author's thesis. I have provided templates for your thesis log on Blackboard. The thesis log is broken up into three parts which are turned in on the dates listed in the course schedule. The grading rubric for thesis logs are the following:

- Is the thesis log complete? (Every quote and thesis are weighted the same.)
- Does each thesis accurately summarize the main points of the reading?
- Are the quotes definitely from the reading and do they actually support the thesis as written?

Wednesday In-Class Group Assignments

Every Wednesday between weeks 5 and 14 there will be an in-class assignment that will take up a majority of class time. The grading rubrics for these assignments will be included with the assignment. If you miss a Wednesday class and therefore miss the in-class group assignment your standard make-up assignment is a 300-500-word summary, in your own words, of the assigned media for that day listed in the course schedule.

Concept Essays

Over the course of the semester you must turn in two concept essays. Check blackboard for a list of essay prompts for you to choose from and consult the course schedule for due dates. Which prompts you answer and in what order is entirely up to you. Each concept essay should be between 750-1000 words in MLA format. The grading rubric for these essays is the following:

- Style and execution: Is the essay between 750-1000 words? Is it free of major spelling and grammar mistakes? Does the essay cite course material and other reliable sources, or does it just cite Wikipedia and dictionary.com? Have you followed MLA format? In general, does this essay look like care was put into it?

- Answering the prompt: Does the essay sufficiently answer the prompt and use the appropriate course material requested by the prompt? For example, if the prompt asks you about "the right to the city" you should be referencing and quoting articles from our "right to the city" week.
- Original research: If the prompt asked you to speculate or provide your own analysis, did you back up your claims with evidence? (In other words, did you do your own research on crime statistics or did you just say, "I feel like cities are more dangerous because the news is always filled with stories of robberies.")

The City in Film Essay

Many of the topics we are exploring in this class play out in film. We will not meet on **April 15** and instead you will be responsible for watching two of the movies on the list in the course schedule below. The paper you will write for this assignment should identify a common theme across both the movies you watched and cite at least one thing we encountered in class. The paper should be between 750 to 1000 words and must be turned in by 11:59PM on Sunday, April 21, 2019.

Scavenger Hunt Final

Your final is a scavenger hunt. In assigned groups, you will walk through the campus and the surrounding neighborhood to find examples of course concepts we've encountered throughout the year. At our final class meeting your group will give a presentation showing what you found. Group assignments and further instructions will be handed out in week 13.

Pop Quizzes

Occasionally we will have a pop quiz at the very beginning of class about the assigned material for that day. This is to make sure you are keeping up with the class homework, show up to class on time, and are generally engaged with course content. The quizzes are very short, usually about 3 questions, and cover very basic facts and comprehension. If you engaged with the material at all, you will pass these quizzes.

Learning Objectives

Upon completion of this course, students will understand the theory of urban geography, which deals with the form and function of cities. They will also understand and be able to discuss the history of urban form; spatial structure of modern urban systems; and the internal structure of the city, emphasizing social and economic patterns.

Grading Scale

The grading scale is as follows:

100-95	94-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	<60
A	A-	B+	B	B	C+	C	C-	D+	D	D-	E

Course Schedule

Week 1

January 23

- Course Orientation

Week 2

January 28

- Read: Dave Lawler's *A World of Boomtowns* in Axios. https://www.axios.com/population-of-world-cities-growing-urbanization-14703668-bab5-4b42-b28b-2dd8c5abe3f2.html (Make sure to click the "go deeper" button if you only see two tiny paragraphs and a map.)
- Watch: Nigeria's 'Worst Place to Live' https://www.youtube.com/watch?v=ceFQLvNFl1A
- Watch: Can Nigeria's Booming Economy Lift its Poorest People? https://www.youtube.com/watch?v=q9sMr4-nyHU

January 30

- ***Read: Lewis Mumford's "What is a City" (PDF on Blackboard).

Week 3

February 4

- ***Read: Patrick Isensee's "What is the Right to the City?" http://www.rioonwatch.org/?p=11668
- ***Read: Manmeet Sahni's "Whose City Is It Anyway? Reclaiming Women's 'Right to the City" http://www.telesurtv.net/english/analysis/Whose-City-Is-it-Anyway-Reclaiming-Womens-Right-to-the-City-20161028-0021.html
- Watch: "2016 Olympics: What Rio Doesn't Want the World to See." *Vox Docs*. https://www.youtube.com/watch?v=1W_zM7koJy8

February 6

- Listen: "Lotteryism Part 1: How the Rich Manipulate the Press to Divide Us" https://soundcloud.com/citationsneeded/lotteryism-part-i-how-the-rich-manipulate-the-press-to-divide-us [Content note: some cursing.]

Week 4

February 11

- ***Read: Charles Marohn's "The Real Reason Your City Has No Money" https://www.strongtowns.org/journal/2017/1/9/the-real-reason-your-city-has-no-money

February 13

- Watch: "Crises of Capitalism" by David Harvey, Royal Society of Arts: https://www.youtube.com/watch?v=qOP2V_np2c0

- Listen: **"**State of Emergency: Cities In Financial Crisis" http://www.npr.org/2013/03/04/173440433/state-of-emergency-cities-in-financial-crisis
- OPPTIONAL: "Financial and Fiscal Crises" and "Gobalization and Meltdown" in Gottdiener et.al.

Week 5

February 18

- ***Read: Massey and Tannen's "A Research Note on Trends in Black Hypersegregation." https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4886656/

February 20

- Listen: Breaking News Consumer's Handbook: Poverty in America Edition" from *On the Media* http://www.wnyc.org/story/breaking-news-consumers-handbook-poverty-america-edition
- OPPTIONAL: "Segregation and Hypersegregation" in Gottdiener et.al.
- **Thesis Log 1 Due**

Week 6

February 25

- Watch: Michelle Alexander "The Future of Race in America" https://www.youtube.com/watch?v=SQ6H-Mz6hgw

February 27

- ***Read: Sandra Bass's "Policing Space, Policing Race." In Social Justice. (PDF on Blackboard)
- OPPTIONAL: "Urban violence and Crime" in Gottdiener et.al.
- **First Concept Essay due**

Week 7

March 4

- ***Read: Chapter 5 of Catherine Tumber's Small, Gritty, and Green: The Promise of America's Smaller Industrial Cities in a Low-Carbon World (PDF on Blackboard)

March 6

- Watch: "Brooklyn Farmer" http://albany.kanopystreaming.com/video/brooklyn-farmer
- OPPTIONAL: "Sustainable urbanization" in Gottdiener et.al.

Week 8

March 11

- ***Read: Chapter 1 of Sharon Zukin's *Naked City* (PDF on Blackboard)

March 13

- Watch: "Longtime Oakland Residents, Artists Driven Out By Gentrification" *CBS SF Bay Area* https://www.youtube.com/watch?v=Q7kTR2rz4XU
- OPPTIONAL: "Gentrification and Urban Redevelopment" in Gottdiener et.al.

[Spring Break]

Week 9

March 25

- ***Read: Elijah Anderson's *A Place on the Corner* (PDF on Blackboard)

March 27

- Watch: Pick any **two** of the eight *Streets by VICE* videos found here: https://www.youtube.com/playlist?list=PLDbSvEZka6GENZSoR4jwXxjPpWIIH8tyl

Week 10

April 1

- ***Read: Chapter 5 of Wade Graham's *Dream Cities* (PDF on Blackboard)

April 3

- Listen and Read: "The Modern Molotch." *99% Invisible* http://99percentinvisible.org/episode/episode-76-the-modern-moloch/
- OPPTIONAL: "Suburbs and Suburbanization" and "Urban and Suburban Politics" in Gottdiener et.al.
- **Concept Essay 2 Due**

Week 11

April 8

- ***Read: Chapter 3 of Kevin Lynch's *The Image of the City* (PDF on Blackboard)

April 10

- Read and Listen: **"**Unpleasant Design and Hostile Architecture. **"***99% invisible* http://99percentinvisible.org/episode/unpleasant-design-hostile-urban-architecture/
- **Thesis Log 2 Due**

Week 12

April 15

I will be out of town so there will be no class meeting. Instead please complete the assignment described in the assignments section of this syllabus. Below is a list of films for you to choose for your assignment. You are responsible for finding these films on your own. Most of them are available at the University library or on popular commercial streaming sites. Links to trailers for all of these movies are provided so you can decide for yourself what you feel comfortable with, or interested in, watching. This is due by 11:59PM on Sunday, April 21.

- 12 O'clock Boys (2013) http://www.imdb.com/title/tt2420006/?ref_=nv_sr_1
- True stories (1986) http://www.imdb.com/title/tt0092117/?ref_=nv_sr_1
- A Bronx Tale (1993) http://www.imdb.com/title/tt0106489/?ref_=nv_sr_1
- Taxi Driver (1976) http://www.imdb.com/title/tt0075314/?ref_=nv_sr_1
- 99 Homes (2014) http://www.imdb.com/title/tt2891174/?ref_=nv_sr_1
- Sunshine State (2002) http://www.imdb.com/title/tt0286179/?ref_=nv_sr_1
- Nightcrawler (2014) http://www.imdb.com/title/tt2872718/?ref_=nv_sr_1
- The Big Short (2015) http://www.imdb.com/title/tt1596363/?ref_=nv_sr_1
- The Pruitt-Igoe Myth (2011) http://www.imdb.com/title/tt1788461/?ref_=nv_sr_1
- Wild Style (1983) http://www.imdb.com/title/tt0084904/?ref_=nv_sr_1

- Urbanized (2011) http://www.imdb.com/title/tt1701976/?ref_=nv_sr_1
- The Throwaways (2013) http://www.imdb.com/title/tt2446180/?ref_=nv_sr_5
- Judge Dread (1995) http://www.imdb.com/title/tt0113492/?ref_=fn_al_tt_2
- El Norte (1983) http://www.imdb.com/title/tt0085482/?ref_=nv_sr_2
- Do the Right Thing (1989) http://www.imdb.com/title/tt0097216/?ref_=nv_sr_1
- Bladerunner (1982) http://www.imdb.com/title/tt0083658/?ref_=nv_sr_1
- West Side Story (1961) http://www.imdb.com/title/tt0055614/?ref_=nv_sr_1
- Robocop (1987) http://www.imdb.com/title/tt0093870/
- Escape from New York (1981) https://www.imdb.com/title/tt0082340/
- Ironweed (1987) https://www.imdb.com/title/tt0093277/?ref_=nv_sr_1

April 17

- ***Read: Gold, John R. "Under Darkened Skies: The City in Science-Fiction Film." *Geography* 86, no. 4 (2001): 337–45. (PDF on Blackboard.)

Week 13

April 22

- ***Read: Shannon Mattern's "Instrumental City: The View from Hudson Yards, circa 2019" https://placesjournal.org/article/instrumental-city-new-york-hudson-yards/
- **Final scavenger hunt group assignments.**

April 24

- ***Read: Ava Kofman's "Google's 'Smart City of Surveillance' Faces New Resistance in Toronto." *The Intercept* https://theintercept.com/2018/11/13/google-quayside-toronto-smart-city/

Week 14

April 29

- ***Read: David Banks's "True-ish Grit" *Real Life Magazine* http://reallifemag.com/true-ish-grit/

May 1

- ***Read: Kyle Chayka's "Welcome to Airspace." https://www.theverge.com/2016/8/3/12325104/airbnb-aesthetic-global-minimalism-startup-gentrification
- OPPTIONAL: "Cultures and Lifestyles" in Gottdiener et.al.

Week 15

May 6

- ***Read: Chapter 7 of Wade Graham's *Dream Cities* (PDF on Blackboard)

May 8

- **Final presentations**
- **Thesis Log 3 due**

University at Albany, SUNY
College of Arts and Sciences
Latin American, Caribbean, and U.S. Latino Studies

ALCS 354/AGOG 354
Environment & Development
3 Credits

Fall 2023

Time Period: Mondays and Wednesdays: 10:10 - 11:30am

Classroom:

Instructor: Tassiana Moura de Oliveira

Office hours: by appt

tmouradeoliveira@albany.edu

Class Description:

A survey of international development issues, focusing on the impact of economic growth, population growth, and increased consumption of natural resources on global and local environments. This course focuses primarily on tropical environments, and particularly on Brazil. It discusses issues of deforestation, desertification, indigeneity, land demarcation, and increased vulnerability to politics and climate change.

Learning Objectives:

By the end of the course, you should be able to do the following:

•Understand the main concepts discussed in class, such us environmental racism, sustainable development, denialism, and more;
•Critically assess the different aspects of climate change and the urge to protect traditional and peripheral communities;
•Discuss the role social movements and non-governmental actors play in this topic;
•Understand how the recent political events in Brazil and in the USA have deepen the problem;
•Develop policy projects that may help countries to overcome challenges of environmental issues and development.

Prerequisites:

A GOG 101 or 102, or permission of instructor

Assessment:

The assessment will consist of the following:
30% midterm test + final test
40% Public Policy proposal
30% Participation in class discussions and class activities

Tests Overview:

In this course, we place a strong emphasis on both knowledge retention and the application of critical thinking skills. To evaluate your progress and understanding of course materials, two primary assessments will be conducted: the Midterm Test and the Final Test. Each of these assessments contributes significantly to your final grade.

1. Midterm and Final Tests (20% each, totaling 40% of final grade):

Nature of Tests: Both the Midterm and Final Tests are designed to evaluate your understanding of the course content covered up to those respective points. They will consist of short answers to analytical questions.

Preparation: It is advised that students revise lecture notes, readings, and class discussions. The tests will be conducted online, during the regular hours of a synchronous class, so students will have access to their notes.

Evaluation Criteria: Your tests will be assessed based on:

Writing: Clarity, structure, grammar, and coherence of your answers.
Critical Thought: Your ability to analyze, critique, and provide nuanced insights into the topic.
Content: Accuracy, depth, and relevance of information, as well as the integration of course materials and external research, if applicable.

Note: It is imperative to adhere to deadlines and prepare adequately for each assessment to succeed in this course. Feedback will be provided post-assessments to support continuous improvement.

<u>Writing Activity (Public Policy Proposal)</u>

An important goal of the course is to develop your ability to write clear, engaging, and coherent texts. The assessment is structured to give you the opportunity to work in a sustained and systematic way on improving your writing.

For the finals, you and your group will have to write a governmental policy proposal with the goal of overcoming or reducing an environmental issue in the Americas. It should be in a pdf Canva project (see attached example) or a website (free) and follow this structure:

Introduction - where you should justify your proposal
The Challenge – here you need to explain the issue based on your literary review
The Proposal – explain your proposal based on what you have learned
Questions and Concerns – bring the answers to the questions raised by your group while working on it, and by your colleagues during the first presentation.
Conclusion
References (Chicago Style)

This project is based on the structure of "A More Equitable Distribution of the Positive Fiscal Benefits of Immigration | The Hamilton Project" (n.d.)

"A More Equitable Distribution of the Positive Fiscal Benefits of Immigration | The Hamilton Project." n.d. Accessed March 24, 2023. https://www.hamiltonproject.org/papers/a_more_equitable_distribution_of_the_positive_fiscal_benefits_of_immigration.

C) Presentation of the Project

The culmination of your hard work will take place during the final week of classes, when you will present your well-researched policy proposals to your peers. This opportunity allows students to showcase their understanding of policy development, as well as demonstrate their ability to craft viable solutions to pressing societal challenges.

The presentations will not only serve as a platform for sharing ideas, but also as a forum for constructive feedback and collaboration. Both fellow students and the participating graduate students will be encouraged to provide insightful comments on the presented policy proposals. This valuable input will enable students to refine their proposals, addressing any potential shortcomings and incorporating diverse perspectives.

After incorporating the feedback received during the presentations, students will submit their final policy proposals for evaluation. The collaborative nature of this process ensures that students graduate from the course with a deep understanding of policy development and a heightened ability to engage in informed, constructive discourse on pressing public policy issues for our environment.

Course Grading Scale

Grade Scale	Grade Conversion	Grade Scale	Grade Conversion
93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	Grade < 60	E

Courses are A-E graded

Reading material

The material will consist of either book chapters, journal articles, films or websites.
These materials will all be available on Brightspace and the libraries

Readings:

Ailton Krenak, Ideas to Postpone the End of the World. Anansi International (2019).

Carruthers, D. V., & Carruthers, D. V. (Eds.). (2008). Environmental justice in Latin America: Problems, promise, and practice. Mit Press.

Dunlap, R. E., & McCright, A. M. (2015). Challenging climate change. Climate change and society: Sociological perspectives, 300.

Jaime Amparo Alves, *The Anti-Black City: Police Terror and Black Urban Life in Brazil*. University of Minnesota Press, 2018.

Leguizamón, A. (2016). Environmental injustice in Argentina: Struggles against genetically modified soy. Journal of Agrarian Change, 16(4), 684-692.

Lohmann, L. (2016). Expanding the concept of environmental racism. Chain Reaction, (127), 35-36.

McLeman, R., & Smit, B. (2006). Migration as an adaptation to climate change. Climatic change, 76(1), 31-53.

Class Schedule

Class	Date	Topic
1	August 21	**Introduction** Icebreaker activity: The students should be divided in groups. I will give them some pictures. They should tell me what they see in them; what are the possible problems; and anything else they think about the issue. This should be an introduction to the topics of the course. *No assigned reading: Sebastião Salgado / Thiago Mundano (Ashes)*
2	August 23	**Is it the end of the world?** Reading: *Ailton Krenak, Ideas to Postpone the End of the World. Anansi International (2019).* *Film: Luiz Bolognesi, A última floresta [The Last Forest] (2021)*
3	August 28	**Introduction to Global Development and Environmental Governance**

		Part One Global Environmental Governance: An Essay. Saunier, Richard E., and Richard Albert. Meganck. Dictionary and Introduction to Global Environmental Governance. 2nd ed. London ;: Earthscan, 2009. Web.
4	August 30	**Environmental justice in Latin America: a theory** Reading: Carruthers, D. V., & Carruthers, D. V. (Eds.). (2008). Environmental justice in Latin America: Problems, promise, and practice. Mit Press. (Excerpts: TBD)
	Sept 4	**Class Suspended – Labor Day**
5	Sept 6	**Environmental injustice: Argentina's case study** Reading: https://onlinelibrary.wiley.com/doi/full/10.1111/joac.12163
6	Sept 11	**Environmental Racism** Reading: Lohmann, L. (2016). Expanding the concept of environmental racism. Chain Reaction, (127), 35-36.
7	Sept 13	**Environmental Racism: case study** Documentary: Quilombo Rio dos Macacos https://youtu.be/-c0GXT1ICis
8	Sept 18	**Waste practices and politics: Introduction** Carruthers, D. V., & Carruthers, D. V. (Eds.). (2008). Environmental justice in Latin America: Problems, promise, and practice. Mit Press. (Chapter 5)
9	Sept 20	**Waste practices and politics: Case study Central America** Video: Plastic waste disposal creates conflict in Central America https://www.youtube.com/watch?v=QNy6upOz9i0
10	Sept 25	Event at UAlbany
11	Sept 27	**Climate change denial** Reading: Dunlap, R. E., & McCright, A. M. (2015). Challenging climate change. Climate change and society: Sociological perspectives, 300. Podcast: https://www.bbc.co.uk/sounds/play/w3ct2yqj **Climate change denial: case study in Brazil**

		Podcast: https://www.bbc.co.uk/programmes/w3ct2yql
12	October 2	**How does it all connect?** Review and discussion on: Indigeneity; environmental justice and racism; waste practices and politics + climate change denialism
13	October 4	**Midterms** – In class test
14	October 9	**Fall Break**
15	October 11	**Review of the Projects** Slide presentation of the groups
16	October 16	**Environment + Progress: is it fair to the countries of the South to ask them to stop "progress"?** Documentary: Amazon is Burning. Blame Beef.
17	October 18	**Development + Environment: case study** **Documentary: Damocracy**
18	October 23	**What is fair? What are the countries of the global South doing?** Observation of the COP28 discussions
19	October 25	**Development to who? The anti-black city** Reading: Jaime Amparo Alves, *The Anti-Black City: Police Terror and Black Urban Life in Brazil*. University of Minnesota Press, 2018.
20	October 30	**Development to who? The anti-indigenous Brazil** **Case study** The territory – Documentary on National Geographic
21	November 1	**What is being done? UN and the fight against climate change.** The COPs
22	November 6	**Results: UN numbers** Case Study
23	November 8	**They cannot wait: climate migration**

		Reading: McLeman, R., & Smit, B. (2006). Migration as an adaptation to climate change. *Climatic change*, *76*(1), 31-53.
24	November 13	**Thinking locally: what are the challenges for our communities?** Climate migration consequences – case study
25	November 15	**Looking Forward: Sustainable Development** Ted Talk Climate change will displace millions. Here's how we prepare | Colette Pichon Battle: https://www.youtube.com/watch?v=8NSQYO2es3U Documentary: The fields of Immokalee https://floridafarmworkers.org/articles/documentary-the-fields-of-immokalee/
26	November 20	**Sustainable development: is it possible?** **Case Study - NY**
	Nov 22- 26	**Thanksgiving**
27	November 27	**Environment and development: is the world ending?** Re-read: Ailton Krenak. Ideas to Postpone the end of The World. Class debate: the groups will prepare their own answers to the problem presented by Ailton Krenak and we will debate.
28	November 29	**Presentation 1 – Exhibit**
29	December 4	**Presentation 2 – Exhibit**
30	December 6	**Final: in class test**

Accommodations

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518-442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

Academic Integrity:

All students are responsible for understanding and adhering to UAlbany's rules on academic integrity. The following website provides an overview of UAlbany's policies as well as links to resources that explain how to avoid allegations of plagiarism: https://www.albany.edu/undergraduate_bulletin/regulations.html. If you have any questions about appropriate citation practices, please do not hesitate to get in touch with me.

Absence policy

If you cannot go to class for any reason, please, send me an e-mail explaining your situation before the class (if possible). Also, please check the University's Medical Excuse Policy: https://www.albany.edu/health_center/medicalexcuse.shtml.

Absence due to religious observance: according to the New York State Education Law (Section 224-A) campuses are required to excuse, without penalty, individual students absent because of religious beliefs, and to provide equivalent opportunities for make-up examinations, study, or work requirements missed because of such absences. I will work directly with students to accommodate religious observances. Students should notify me of record in a timely manner.

Policy on Missed Quizzes/Exams and Late Submission of Papers

If there are circumstances beyond your control (e.g., an illness or family emergency) that cause you to miss a scheduled exam or to submit an assignment after its due date, then please get in touch with me as soon as possible to discuss possible accommodations.

Policy on "I" (Incomplete) Grades

If circumstances arise that prevent you from being able to complete the required coursework by the end of the semester, then please get in touch with me as soon as possible to discuss the possibility of taking the course for an "I" (Incomplete) grade. Please see the university's policy on incomplete grades at https://www.albany.edu/undergraduateeducation/grading.php.

Title IX Information

Title IX of the Education Amendments of 1972 is a federal civil rights law that prohibits discrimination on the basis of sex in federally funded education programs and activities.
The SUNY-wide Sexual Violence Prevention and Response Policies prohibit offenses defined as sexual harassment, sexual assault, intimate partner violence (dating or domestic violence), sexual exploitation, and stalking. The SUNY-wide Sexual Violence Prevention and Response Policies apply to the entire University at Albany community, including students, faculty, and staff of all gender identities. The University at Albany provides a variety of resources for support and advocacy to assist individuals who have experienced sexual offenses.

Confidential support and guidance can be found through the Counseling Center (518-442-5800, https://www.albany.edu/counseling_center/), the University Health Center (518-442-5454, https://www.albany.edu/health_center/), and the Interfaith Center (518-489-8573, https://www.albany.edu/spirituality/onCampus.shtml). Individuals at these locations will not report crimes to law enforcement or university officials without permission, except for in extreme circumstances, such as a health and/or safety emergency. Additionally, the Advocates at the University at Albany's Advocacy Center for Sexual Violence are available to assist students without sharing information that could identify them (518-442-CARE, https://www.albany.edu/advocacycenter/).

Sexual offenses can be reported non-confidentially to the Title IX Coordinator within The Office for Equity and Compliance (518-442-3800, https://www.albany.edu/equity-compliance/, Building 25, Room 117) and/or the University Police Department (518-442-3131, http://police.albany.edu/).

Please note, faculty members are considered "responsible employees" at the University at Albany, meaning that they are required to report all known relevant details about a complaint of sexual violence to the University's Title IX Coordinator, including names of anyone involved or present, date, time, and location.

In case of an emergency, please call 911.

Syllabus

People, Place, and Power
Course number USP 460/GOG 460
M &W 3:00-4:20
Fall 2020
LC 3C
Office AS232

Instructor: David A. Lewis
Phone (518) 442-0267
Fax (518) 442-4742
Email: dalewis@albany.edu
Office hours: M & W 9:00-11:00am
Or by appointment

Grading Policy: No late work will be accepted without due cause and class attendance is mandatory. All violations of the academic integrity policy at the minimum will result in a failure for the assignment. A second violation will result failing to class at minimum.

Newspaper article reviews	25%
Class participation	10%
Quizzes	25%
Final exam	30%
Advocacy Letter	10%

There are required reading for each class. In addition, each week you will review a recent major newspaper article that addresses an environmental planning issue. This journal will be reviewed in the middle of the term and during the last week of the term. In addition, there will be 10 unannounced quizzes throughout the semester based on the readings for the class.

Course Description: This course will examine the relationships between current energy supplies and alternatives that are renewable and more environmentally sustainable. It begin with defining energy then turns to an analysis of the economic, social, political, and technological factors that determine the potential a carbon free energy future.

Credit hours: 3

Pre-requisites: None

Course objectives include: At the end of this course, students will be able to 1) identify how normative bias influences planning and policy choices; 2) describe major conflicts in energy planning and policy; and 3) understand the differences between physical/technological barriers versus economic/political impediments to sustainable energy planning/policy options.

Required Texts: Order online

Pahl, Greg. 2012. ***Power from the People: How to Organize, Finance, and Launch Local Energy Projects*. White River Junction, VT.: Chelsea Green Publishing.**

Other readings will be handed out in class or available are on Blackboard.

Grading Scale

A = 93-100%; A- = 90-<93%; B+ = 87-<90%; B = 83-<87%; B- = 80-<83%; C+ = 77-<80%; C = 73-<77%; C- = 70-<73%; D+ = 67-<70%; D = 63-<67%; D- = 60-<63%; E = <60%.

Schedule:

8/24/2020: Introduction

8/26/2020: What changes people's environmental actions?
Ridley, Matt and Low, Bobbi. 1996. Can Selfishness Save the Environment? in Readings in Planning Theory edited by Campbell and Fainstein. New York: Blackwell.

Perez, R., K. Zweibel and T.E. Hoff, (2011): Solar Power Generation in the US: Too Expensive, or a Bargain? *Journal of Energy Policy*, 39 (2011), 7290-7297

8/31/2020: Black Lives Matter, Environmental Justice, and the Politics of Power
Watch Video
Thomas, Leah. 2020. How Black Lives Matter And Environmental Justice Are Connected. Accessed on July 30, 2020 @ https://www.youtube.com/watch?v=Di-JmGwjoOs.

Pellows, David. 2016. Towards a Critical Environmental Justice Studies: Black Lives Matter as an Environmental Justice Challenge. *Du Bois Review-Social Science Research on Race*. 13(2): 1-16.

Bullard, Robert. 1993. "Anatomy of Environmental Racism and the Environmental Justice Movement." Ed. Bullard, R. *Confronting Environmental Racism: Voices form the Grassroots*. Boston: South End Press. Introduction (p 7-13), chapter 1 (p 15-26), and chapter 4 (p 63-75)

9/2/2020: Energy Policy in the US
List of Elected Official and Contact Information Due by email as an attached word document.

Readings:
GAO. 2005. U.S. National Energy Policy: Inventory of Major Federal Energy Programs and Status of Policy Recommendations. Washington, DC. U.S. Government Accountability Office. Pages 1-63.

Laird, Frank. 2009. A Full-Court Press for Renewable Energy. *Issues in Science and Technology*. 25(2): 53-56.

Jennings, Philip. 2009. New Direction in Renewable Energy Education. *Renewable Energy: An International Journal.* 34(2): 435-439.

9/7/2020: Current Energy Consumption and Fuel Sources
List of Elected Official and Contact Information Due by email as an attached word document.
DOE. 2009. Annual Energy Review, 2009. Washington, DC. U.S. Department of Energy. Review tables in sections 1, 2, 4, and 10.

Sovacool, Benjamin. 2007. Coal and Nuclear: Creating a False Dichotomy for American Energy Policy. *Policy Sciences*. 40(2): 101-122.

9/9/2020: Available Renewable Energy Resources
National Academy of Science. 2010. Electricity from Renewable Resources: Status, Prospects, and Impediments. Washington, DC: National Academies Press. Pages 1-63.

9/14/2020: Impacts of Current Energy Supplies and Consumption
Dincer, Ibrahim . 2001. Environmental Issues: I-Energy Utilization. Energy Sources. 23(1)

Dincer, Ibrahim. 1998. Energy and Environmental Impacts: Present and Future Perspectives. *Energy Sources*. 20: 427-453,

9/16/2020: Energy, the Environment and the Economy
Elected Official Review Due via email
Readings
Bezdak, Roger. 1995. The Net Impact of Environmental Protection on Jobs and the Economy. In Environmental Justice: Issues, Policies and Solutions. Edited by Bryant, B. Washington, DC: Island Press.

Meyer, Stephen. 1995. The Economic Impact of Environmental Regulation. *Journal of Environmental Law and Practice.* 3(2): 4-16.

9/21/2020: Policy not Politics
Readings:
Norberg-Bohm, Vicki. 2000. Creating Incentives for Environmentally Enhancing Technological Change: Lesson from 30 Years of U.S. Energy Policy. Technological Forecasting and Social Change. 65: 125-148.

Jacobsson, Staffan and Johnson, Anna. 2000. The Diffusion of Renewable Energy Technology: An Analytical Framework and Key Issues for Research. Energy Policy. 28: 625-640.

9/23/2020: Wind Power
Readings:
Bolinger, Mark. 2004. Making European-style community wind power development work in the US. *Renewable and Sustainable Energy Reviews*. 9(6): 556-575.

Wickersham, Jay. 2004. Sacred Landscapes ad Profane Structures: How the Offshore Wind Power Challenges the Environmental Impact Review process. *Environmental Affairs*. 31(325): 325-347.

9/28/2020: Wind Power
Readings:
Lewis, Joanna and Wiser, Ryan. 2007. Fostering a Renewable Energy Technology Industry: An International Comparison of Wind Industry Policy Support Mechanisms. Energy Policy. 35: 1844-1857.

Leithead, W.E. 2007. Wind Energy. *Philosophical Transactions of the Royal Society*. 365: 957-970.

9/30/2020 Wind Power
Journal Dues for Review: FIVE weekly entries should be completed.

Readings:
Peel, Deborah and Lloyd, Gregory. 2007. Positive Planning for Wind-Turbines in an Urban Context. *Local Environment*. 12(4): 343-354.

Katherine Richardson, Dorthe Dahl-Jensen, Jørgen Elmeskov, Cathrine Hagem, Jørgen Henningsen, John Korstgård, Niels Buus Kristensen, Poul Erik Morthorst, Jørgen E. Olesen, Mette Wier, Marianne Nielsen, Kenneth Karlsson. 2011. Denmark's Road for Fossil Fuel Independence. *Solutions for a Sustainable and Desirable Future*. 2(4): http://www.thesolutionsjournal.com/node/954

10/5/2020: Hydrofracturing

Journal Dues for Review: Six weekly entries should be completed.
Film: The Sky is Pink
Readings:
Howarth, Robert and Anthony Ingraffe. 2011. Should Fracking Stop. *Nature*. 477, 271-273.
Engelder, Terry. 2011. Fracking is Crucial to Global Economic Stability. *Nature*. 477, 274-276.

10/7/2020: Draft Supplemental Generic Environmental Impact Statement (SGEIS)
Readings:
NYSDEC. 2011. Preliminary Revised Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program. Albany, NY: NYS Department of Environmental Conservation. (July 2011). Executive Summary, page 1-26 and Chapter 1, pages1-1 to 1-20 and parts of Chapter 6 TBD.

10/12/2020: Renewable Options in NYS
Readings:
Van Haaren, Rob and Fthenakism Vasikis. 2011. GIS Based Wind Farm Site Selection using multi-criteria analysis (SMCA): Evaluating the case of New York. *Renewable and Sustainable Energy Review*. 15: 3332-3340.

Hevesi, Alan. 2005. *Energizing the Future. The Benefits of Renewable Energy for New York State*. Albany, NK: New York State Comptroller's Office.

10/14/2020: It is not a Technological Issue
Draft of Advocacy Letter Due

Readings:
National Academy of Science. *American's Energy Future: Technology and Transformation; Summary Edition*. Washington, DC: National Academies Press. Pages 9 through 49 and pages 82 through 94.

10/19/2020: Local Level Actions
Readings:
Parker, Paul and Rowlands, Ian. 2007. City Planners Maintain Climate Change Despite National Cuts: Residential Energy Efficiency Programme Valued at Local Level. *Local Environment.* 12(5): 505-517.

Condon, Patrick; Cavens, Duncan; and Miller, Nicole. 2009. *Urban Planning Tools for Climate Change Mitigation*. Cambridge, MA: Lincoln Institute of Land Policy.

10/21/2020: Why Equality Matters
Readings
Moyers, Bill. 2003. The Progressive Story of America. Washington, DC.

MacEwan, Arthur and Miller, John. 2011. *Economic Collapse, Economic Change: Getting to the Roots of the Crisis*. London: M.E. Sharpe. Pages 33-52.

Geoghegen, Thomas. 2010. Notebook: Consider the Germans. *Harper's Magazine*. March 2010.

The Importance of the Census and the Vote:
https://www.oprah.com/sp/own-your-vote.html
ballotpedia

10/26/2020: But There is No Money
Readings:
Ludder, Sunshine and Parrott, James. 2010. *New York has the Ways and Means: How and Why Wall Street Should Give Back to Main Street*. New York: Fiscal Policy Institute.

Greenhouse, Steven. 2011. The Wageless, Profitable Recovery. *New York Times*. August 3, 2011. Accessed on 8/3/11 at http://economix.blogs.nytimes.com/2011/06/30/the-wageless-profitable-recovery/

Krugman, Paul. 2011. Corporate Cash Con. *New York Times*, online July 3, 2011. at http://www.nytimes.com/2011/07/04/opinion/04krugman.html

Bragman, Walker and Sirota, David. 2020. Revealed: super-rich donate to Cuomo as he rejects tax hikes for billionaires. *The Guardian*. July 31, 2020. Accessed on July 31, 2020 @ https://www.theguardian.com/us-news/2020/jul/31/cuomo-new-york-governor-billionaires-super-rich.

10/28/2020: Taxes, Investment, and Other Factors
Readings:
Simon, Christopher. 2009. Cultural Constraints on Wind and Solar Energy in the U.S. Context. *Comparative Technology Transfer and Society*. 7(3): 251-269.

Delbeke, J.; Klaassen, G.; van Ireland, T.; Zapfel, P. 2010. The Role of Environmental Economics in Recent Policy Making at the European Commission. *Review of Environmental Economics and Policy*. 4(1): 24-43.

11/2/2020: Global Supplies and Other Issues
Film: Crude Awakening: The Oil Crash
Readings:
Chow, Jeffrey; Kopp, Raymond; and Portney, Paul. 2003. Energy Resources and Global Development. *Science*. 302(5650): 1528-1531.

Ferguson, Andrew. 2001. Population and the Demise of Cheap Energy. *Politics and the Life Sciences*. 20(2): 217-226.

11/4/2020: Community Organizing for Alternative Energy
Final Draft of Advocacy Letter Due

Readings:
Pahl, Greg. 2012. ***Power from the People: How to Organize, Finance, and Launch Local Energy Projects*. White River Junction, VT.: Chelsea Green Publishing. Foreward, Introduction, and chapters 1, 2, and 3**

11/9/2020: Community Organizing for Alternative Energy
Readings:
Pahl, Greg. 2012. ***Power from the People: How to Organize, Finance, and Launch Local Energy Projects*. White River Junction, VT.: Chelsea Green Publishing.** Chapters 4 and 5.

11/11/2020: Community Organizing for Alternative Energy
Readings:

Pahl, Greg. 2012. ***Power from the People: How to Organize, Finance, and Launch Local Energy Projects*. White River Junction, VT.: Chelsea Green Publishing.** Chapters 6, 7 and 13.

11/18/2020: More Alternatives
Readings:

Ivner,, Jenny. 2009. Energy Planning with Decision-Making Tools: Experience from an Energy-Planning Project. *Local Environment*. 14(9): 833-850.

Owen, Steve and Boyer, Jeff. 2006. Energy, Environment, and Sustainable Industry in the Appalachian Mountains, United State. *Mountain Research and Development*. 20(2): 115-118.

Heiman, Michael and Solomon, Barry. 2004. Power to the People: Electric Utility Restructuring and the Commitment to Renewable Energy. *Annals of the Association of American Geographers*. 94(1); 94-116.

11/23/2020: More Alternatives:

ALL 12 JOURNALS ENTRIES are DUE

Readings:

Gilbert, Lewis. 2010, Sustainability is More Than Green: A Framework for University Leadership. *Solutions Journal*. 1(6): 54-55.

Yung-Chi, Shen; Chou, Chiyang James; and Lin, Grace T.R. 2011. The Portfolio of Renewable Energy Sources for Achieving the Three E Policy Goals. *Energy*. 36(5): 2589-2598.

Final Exam: TBD

Standards of Academic Integrity

Note: The policies and procedures in the following section on Standards of Academic Integrity are effective beginning Fall 2013 by action of the University Senate.

As a community of scholars, the University at Albany has a special responsibility to integrity and truth. By testing, analyzing, and scrutinizing ideas and assumptions, scholarly inquiry produces the timely and valuable bodies of knowledge that guide and inform important and significant decisions, policies, and choices. Our duty to be honest, methodical and careful in the attribution of data and ideas to their sources establishes the foundations of our work. Misrepresenting or falsifying scholarship undermines the essential trust on which our community depends. Every member of the community, including both faculty and students, shares an interest in maintaining academic integrity.

When the entire University community upholds the principles of academic integrity, it creates an environment where students value their education and embrace experiences of discovery and intellectual growth. In this environment, grades and degrees are awarded and applauded as the

recognition of years of learning, achievement, discipline, and hard work. Maintaining the highest standards of academic integrity insures the value and reputation of our degree programs; these standards represent an ethical obligation for faculty intrinsic to their role as educators, as well as a pledge of honor on the part of students. If a violation of academic integrity occurs, faculty, deans, and students all share in the responsibility to report it.

Violations of trust harm everyone. The academic community needs to trust that its members do not misrepresent their data, take credit for another's ideas or labor, misrepresent or interfere with the work of other scholars, or present previous work as if it were new. Acts of academic dishonesty undermine the value and credibility of the institution as a whole, and may distract others from important scholarship or divert resources away from critical research. In particular, students who plagiarize or falsify their work not only fail to adhere to the principles of scholarly inquiry and fail their peers by taking undeserved credit or reward, but they also fail to demonstrate their learning.

These guidelines define a shared context of values to help both students and faculty to make individual and institutional decisions about academic integrity. *Every student has the responsibility to become familiar with the standards of academic integrity at the University. Faculty members must specify in their syllabi information about academic integrity, and may refer students to this policy for more information. Nonetheless, student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly, and UAlbany faculty are responsible for teaching, modeling and upholding them.* Anything less undermines the worth and value of our intellectual work, and the reputation and credibility of the University at Albany degree.

Resources for Students

The University Libraries offer important resources for students seeking additional orientation to academic integrity.

Practicing Academic Integrity Site: library.albany.edu/infolit/integrity. This site provides access to concise and engaging educational resources that will help students navigate through the complexities surrounding information use and creation in today's digital environment. Acknowledging the work of others through citation (and its flip side, plagiarism), copyright, the ethics of sharing information in different formats, and the importance of contributing one's own voice to academic conversations are all highlighted.

Citation Tools: the University Libraries offers a wide variety of citation tools which may be found at libguides.library.albany.edu/citationgenerators. These resources include citation generators and more extensive citation management tools, such as Zotero, Citation generators are websites or mobile apps that automatically format citations and bibliographies. Users select a type of source to be cited, such as a book, enter the book title, and the citation generator retrieves the required data and creates the citation data. Citation generators are useful for undergraduates who need to create bibliographies when writing papers, but it is important to check the resulting citations for errors. Citation management software programs allow students to create and organize a personal library of references and articles, format citations for a bibliography in various citation styles, and sometimes share and collaborate with others. Also available is CitationFox, an extensive resource developed by UAlbany librarians that provides citation guidance and examples for both the MLA and APA style.

Students should consult syllabi, their instructors, and in relevant circumstances their advisors for information about specific policies on academic integrity in courses or other academic exercises such as comprehensive/qualifying examinations, theses, and dissertations.
Graduate students may access additional information on Academic Integrity, Conduct, and Research Regulations via www.albany.edu/graduate/index.php.

Examples of Academic Dishonesty

The following is a list of acts considered to be academically dishonest and therefore unacceptable. Committing such acts is a breach of integrity and is subject to penalty. No such list can, of course, describe all possible types or degrees of academic dishonesty. Therefore this list should be viewed as a set of examples, rather than as an exhaustive list. Individual faculty members, Deans of Schools and Colleges as appropriate, and Community Standards will continue to judge each breach according to its particular context.

Plagiarism: Presenting as one's own work the work of another person (for example, the words, ideas, information, data, evidence, organizing principles, or style of presentation of someone else). Some examples of plagiarism include copying, paraphrasing, or summarizing without acknowledgment, submission of another student's work as one's own, the purchase/use of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. Students are responsible for understanding legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness.

Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.

Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; unauthorized discussion of exam questions during the examination period; and the passing of any examination information to students who have not yet taken the examination. There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

Multiple Submission: Submitting substantial portions of the same work for credit more than once without receiving the prior explicit consent of the instructor to whom the material is being submitted the second or subsequent time.

Forgery: Imitating another person's signature on academic or other official documents, including class material.

Sabotage: Willfully destroying, damaging, or stealing of another's work or working materials (including lab experiments, computer programs, term papers, digital files, or projects).

Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises when this is forbidden by the instructor(s). The default faculty assumption is that work submitted for credit is entirely one's own. At the same time, standards on appropriate and inappropriate collaboration as well as the need for collaboration vary across courses and disciplines. Therefore, students who want to confer or collaborate with one another on work receiving academic credit should seek the instructor's permission to collaborate.
Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment (for example, the false or misleading citation of sources, the falsification of experimental or computer data, etc.).
Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class.
Theft, Damage, or Misuse of Library or IT Resources: Removing uncharged library materials from the library, defacing or damaging library materials, intentionally displacing or hoarding materials within the library for one's unauthorized private use, or other abuse of reserve-book privileges. Any violation of the University's Responsible Use of Information Technology policy. This includes, but is not limited to, unauthorized use of the University's or another person's computer accounts, codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University.

Penalties and Procedures for Violations of Academic Integrity

The course instructor is responsible for determining when a student has violated academic integrity in a course. Students engaging in other academic activities such as qualifying or comprehensive examinations, theses, dissertations must also adhere to the standards of academic integrity outlined in this policy. In these cases, academic advisors and department, college, or school officials responsible for a student's program of study are charged with determining if a student has violated academic integrity.
When a faculty member determines that a student has violated academic integrity, he or she will inform the student and impose an appropriate sanction. Faculty members must respond in a manner most appropriate to the particular infraction and the circumstances of the case in question, according to his or her best judgment. Penalties for violations of academic integrity may include, but are not limited to, the following:

1. Warning without further penalty, or with a requirement that an assignment be redone without a breach of academic integrity and resubmitted
2. Lowering of an assignment/exam grade
3. Assigning a failing grade on a paper containing plagiarized material
4. Assigning a failing grade on any examination in which cheating occurred
5. Lowering a course grade
6. Giving a failing grade in a course or other academic exercise

In addition, faculty members encountering a violation of academic integrity in their courses are required to complete and file the *Violation of Academic Integrity Report.* The report should indicate the sanction imposed and a brief description of the incident. Faculty filing a VAIR will submit copies both to the Vice Provost for Undergraduate Education or Graduate Education, as appropriate, and to the student.
If a faculty member informs the student that he or she will receive a failing grade for the course as a whole or for a component of the course as a result of academic dishonesty, the student

receiving such a penalty will not be permitted to withdraw from the course, or to change the grading basis of the course from *A-E* to *S/U*.
Students who feel they have been erroneously penalized for an academic integrity infraction, or who think that a penalty is inappropriate, may make use of the grievance procedures, beginning with the Department and the College/School where the course was offered. Each College/School of the University has procedures for students who seek to dispute grades assigned or penalties imposed for academic infractions. Copies of the procedures are maintained in the College/School Deans' Offices or on their respective websites.
If a student is cleared of wrongdoing through the grievance process, the student will not be subject to any penalties and the *Violation of Academic Integrity Report* associated with the case will be destroyed.
A violation confirmed by admission on the part of the student, by the student's acceptance of the charges and penalties outlined in the *Violation of Academic Integrity Report*, or through the grievance process will result in the enforcement of the penalty determined by the faculty member reporting the incident.
Under either of the following two conditions, a violation *may* be forwarded to Community Standards for further adjudication and, potentially, further sanction:

- The faculty member reporting the incident has determined that the violation is serious enough to merit a failing grade in the course, and would like to have the case formally adjudicated at this higher level
- A faculty member or College/School Dean responsible for the academic program in which the offense has occurred deems it to be a particularly egregious case of academic dishonesty, regardless of the penalty imposed by the instructor, and would like to see the case formally adjudicated at this higher level

In these circumstances, the faculty member or College/School Dean may request that the Office of the Vice Provost for Undergraduate Education or Graduate Education, as appropriate, forward the case to Community Standards.
However, the following circumstance will *automatically* result in the case being forwarded to Community Standards for adjudication:

- A previous *Violation of Academic Integrity Report* on the student. When a student violates academic integrity in more than one academic exercise, whether those infractions occurred during the same or different periods of time, or in the same or different courses, the University regards the offense as an especially serious subversion of academic integrity. The matter becomes particularly severe when the student has been confronted with the first infraction before the second is committed. Whenever the Offices of Undergraduate Education or Graduate Education receive a second *Violation of Academic Integrity Report* on a student, the Vice Provost will request a hearing before Community Standards.

If a case is referred to Community Standards, that office will act in accordance with its standard procedures to determine the final disposition of the case, which may include revoking a student's scholarship or fellowship, or teaching or research assistantship, as well as or in addition to disciplinary probation, suspension, or expulsion. If a hearing is held and a student is found "not in violation," no punitive action may be taken against the student and the *Violation of Academic Integrity Report* associated with the incident will be destroyed.

A copy of the *Violation of Academic Integrity Report* associated with any incident in which the student is *not* cleared of wrongdoing (through the grievance process or by Community Standards) will be retained in the Offices of Undergraduate Education or Graduate Education, as appropriate. The Offices of Undergraduate Education or Graduate Education will maintain a copy of such reports for periods in accordance with SUNY student record retention policies: three years beyond the academic year in which the violation occurred, in the case of minor code violations (a single offense resulting in a sanction or sanctions short of a failing grade in the course), and seven years beyond the academic year in which the violation occurred, in the case of major code violations (a failing grade in the course, or any offense referred to and confirmed by Community Standards). A student's record of violations of academic integrity may be communicated to graduate or professional schools or employers who request such information about applicants who have attended the University at Albany.

The Director of Libraries or Chief Information Officer, upon a finding of theft, damage, misuse of facilities or resources, or a violation of University policies, will forward all such cases to Community Standards for review and disposition, which can include suspension or expulsion from the University. The Director of Libraries or Chief Information Officer may, in individual cases, limit access to the Libraries or IT resources pending action by Community Standards. In all other cases of academic dishonesty by students, which come to the attention of any staff, faculty member, or student, it is expected that the Vice Provost for Undergraduate Education or Graduate Education, as appropriate, will be consulted about such infractions. In addition, University Police may elect to pursue the breaches, consistent with their policies.

Community Standards was established by the governing bodies of the University at Albany and is administratively the responsibility of the Vice President for Student Affairs. Any questions about the procedures of Community Standards may be secured by inquiry to that office.

Policy for Freedom of Expression

The University reaffirms its commitment to the principle that the widest possible scope for freedom of expression is the foundation of an institution dedicated to vigorous inquiry, robust debate, and the continuous search for a proper balance between freedom and order. The University seeks to foster an environment in which persons who are on its campus legitimately may express their views as widely and as passionately as possible; at the same time, the University pledges to provide the greatest protection available for controversial, unpopular, dissident, or minority opinions. The University believes that censorship is always suspect, that intimidation is always repugnant, and that attempts to discourage constitutionally protected expression may be antithetical to the University's essential missions: to discover new knowledge and to educate.

All persons on University-controlled premises are bound by the Rules and Regulations for Maintenance of Public Order, which deal in part with freedom of expression (adopted by the Board of Trustees of the of the State University of New York June 18,1969; amended 1969,1980). Members of the University community should familiarize themselves with those rules and regulations. In addition, University faculty are protected by and bound by Article XI, Title 1, Sec. I of the Policies of the Board of Trustees (adopted January 1987), entitled "Academic Freedom."

University officials or other members of the University community in a position to review posters, publications, speakers, performances, or any other form of expression may establish legitimate time, place, and manner regulations for the maintenance of an orderly educational

environment; however, they may not prohibit expression for any reason related to the content of the expression, except as permitted in those narrow areas of expression devoid of federal or state constitutional protection.

Speakers invited to campus by University groups or individuals, and other speakers who may be legitimately present on campus, will be given the utmost protection to communicate their messages without disruptive harassment or interference. Opponents to those speakers enjoy the same protections for expressing their dissent.

All members of the University community share the duty to support, protect, and extend the commitment to the principle of freedom of expression, and to discuss this commitment with groups or individuals who seek to take part in University life. While all persons may seek to peacefully discourage speech that may be unnecessarily offensive to particular individuals or groups, speech that may be antithetical to the University's values, those persons must support the legal right of free speech.

Under Section VII.7.3.2.3 of its charge, the Committee on Academic Freedom, Freedom of Expression, and Community Responsibility (CAFFECoR) will serve as a hearing body available to those members of the University community who feel their freedom of expression has been unfairly suppressed. The Committee will report its findings to the President for further review and action.

ABIO 402: Evolution, Fall 2022, 3 credits

Monday and Wednesday 3:00 – 4:20 pm, LC19

Instructor: Dr. Jeremy Kirchman, Curator of Birds, New York State Museum, Affiliate Professor, Department of Biological Sciences and Department of Atmospheric and Environmental Sciences, University at Albany.

E-mail: jkirchman@albany.edu
Office: New York State Museum, 222 Madison Ave., Cultural Education Center, 3126
Phone: 518 474 1441
Office Hours: Wednesdays after class, 4:20-5:00 pm in Biology 127 (inside the Biology Department office suite), and by appointment on campus or at NYSM.

Course Description: In this course you will learn how biological evolution works, and has produced the diversity of biological life on Earth, from the origin of DNA-based life to the development of human culture. Fundamental concepts in biology will be stressed, including heredity, mutation, selection, genetic drift, adaptation, mass extinction, and the formation of new species. There are no laboratory sections, no take-home assignments, or group assignments or regular discussion periods; you are expected to attend the lectures each week and earn your grade through unit exams and pop quizzes. This is an in-person course, and it will be very hard to succeed if you skip the lectures and miss the quizzes. During class, all students are encouraged to ask questions to satisfy their curiosity and seek clarification when needed.

Learning Objectives: Students will learn 1) The evolution of life on Earth is the single most interesting thing that has happened in the history of the universe. 2) There is grandeur in this (evolutionary) view of life.

Prerequisites: You are expected to have a basic understanding of genetics from having passed ABIO 212Y, and of organismal biology from having passed ABIO 330. If you have transferred to U-Albany from another school where you took introductory biology courses, I will assume you have a sound understanding of how genes and proteins function in the cell. If you are having trouble keeping up at any point, ask for clarification in class or come to my office hours.

Course materials: We will use the textbook *Evolution*, second media edition by Bergstrom and Dugatkin. Students are required to purchase the E-book version directly from the publisher, W.W. Norton (https://wwnorton.com/books/9780393690118). The E-book option is half the cost of the paper version and is with you anywhere you go, through an internet connection. Please get the book as soon as possible, by next week at the latest. In addition to the textbook, I will assign some additional readings throughout the semester. These essays and original studies from the peer-reviewed literature will be posted to the course webpage on Blackboard. Lecture presentations (Powerpoint slides) will be made available on Blackboard just prior to the start of each class.

Evaluation and grading: Your final grade for this semester will be calculated as a percentage of the **350 possible points**, with standard (not 'curved') grading: 94-100%=A; 90-93%=A-; 87-89%=B+; 84-86%=B; 80-83%=B-; 77-79%=C+; 74-76%=C; 70-73%=C-; 67-69%=D+; 64-66%=D; 60-63%=D-; 59-0%=E. You should be able to calculate your percentage at any time during the semester, and have a good idea of the grade that you have earned as of that time.

There will be three, one-hour **Unit Exams** worth **100 points each**. The first two exams will take place in our regular lecture period. The third exam is not cumulative, but it will be given during the scheduled Final Exam period in finals week. **The only individuals allowed to take a makeup exam are those who missed the normally scheduled exams with legitimate reasons established by the University.** Students must report positive COVID-19 tests to the University office of Health and Safety **(**https://www.albany.edu/covid-19/health-safety). The University's Student Health Services will provide medical excuses to students for medical conditions that prevent a student from attending an exam or a full week of classes and meet certain conditions listed here: https://www.albany.edu/health_center/medicalexcuse.shtml. Any make-up exams will be arranged by the instructor and will not be the same as the normally scheduled exams.

In addition, there will be **six unannounced pop quizzes worth 10 points each** given during lecture periods. The possibility of a quiz (in addition to my exciting and entertaining lecture style) should encourage you to attend every lecture. There are no make-up opportunities for missed quizzes, but **you can drop your lowest quiz score** and keep the points from the best five, for a total of 50 points.

Academic integrity: Cheating on exams or quizzes may be grounds dismissal from the university. Students are expected to be familiar with the SUNY-Albany Academic Integrity Policies, which can be found here: http://www.albany.edu/undergraduate_bulletin/regulations.html.

Reasonable accommodation: If you require additional time for exams or other accommodations for personal, medical, or religious reasons, please register with the University's Disability Access and Inclusion Student Services well ahead of the first exam. Their website is https://www.albany.edu/disability, and you can email them at DAISS@albany.edu.

Tentative Schedule:

Date	Topics / Activites	Reading Assignments, Videos
	Unit 1: Discovering how evolution works	
Aug. 22	Course intro, Origins of evolutionary biology	Chapter 2.1-2.4; Wallace Video
Aug. 24	Darwin's insights, *The Origin*, Modern synthesis	Chapter 2.5-2.9; Gillings Essay
Aug. 29	Natural selection in the lab and in nature	Chapter 3.1-3.3; Hoekstra Video
Aug. 31	The power and limits on natural selection	Chapter 3.4-3.6; Lenski essay
Sept. 5	No class: Labor Day	
Sept. 7	Evolution in populations; Hardy-Weinberg	Chapter 6; 7.2, 7.3, 7.6
Sept. 12	Genetic drift, phylogeography	Chapter 8.1-8.4 (no boxes)
Sept. 14	Speciation	Chapter 14
Sept. 19	Adaptive radiations	Chapter 14 Grants Video
Sept. 21	Unit 1 Exam	
	Unit 2: Patterns of Evolution	
Sept. 26	Phylogenies, phylogenetic theory	Chapter 4
Sept. 28	Geological time, The origin of cells, Eukaryotes	Chapter 11.2-11.5
Oct. 3	Major transitions:, Multicellularity, Groups	Chapter 12.1-12.5
Oct. 5	Sex, The Red Queen	Chapter 16
Oct. 10	Fall break, no class	
Oct. 12	Ediacara, Cambrian Explosion	Chapter 15.5
Oct. 17	Tetrapods, The rise of Birds	Bio 101; Shubin Video
Oct. 19	Mass extinctions	Chapter 15.3, Raup & Sepkoski
Oct. 24	The drivers of extinction	Chapter 15.4
Oct. 26	Unit 2 Exam	
	Unit 3: Human evolution, other topics	
Oct. 31	The rise of mammals	Bio 101
Nov. 2	Humans on the tree of life	Chapter 19.1-19.3
Nov. 7	The rise and spread of Homo sapiens	Chapter 19.4
Nov. 9	Humans as selective agents	Chapter 15; Tusklessness Video
Nov. 14	Adaptive evolution in humans	Chapter 18.4, Lactase Video
Nov. 16	Human parasites and Co-evolution	Chapter 20.5; 18.1-18.3
Nov. 21	Human viruses and disease	Chapter 20.3; Chapter 10.3
Nov. 23	No classes: Thanksgiving Break	
Nov. 28	Genome evolution	Chapter 10.1-10.2
Nov. 30	Final thoughts	
Dec. 5	Unit 3 Exam	

University at Albany
School of Public Health
SPH 321 Global Environmental Issues and Their Effect on Human Health
Tuesday & Thursdays
12:00-1:20 PM
Spring 2023

INSTRUCTOR:
David C. Spink, Ph.D.
Email:
dspink@albany.edu

OFFICE HOURS:
Tuesdays and Thursdays from 1:30 pm – 2:30 pm in
Taconic 332, or by Appointment
Appointments can be scheduled for in-person or via Zoom

TEACHING ASSISTANT:
Francis Ofori-Awuku
Email: fofori-awuku@albany.edu

COURSE CREDIT HOURS 3 credits

COURSE PREREQUISITES: 1 semester of college-level course in biology or chemistry

COURSE DESCRIPTION:
The environment affects our health, economics, and quality of life. Globalization has made the earth a much smaller place so that we can no longer focus merely on issues in the United States. This course will address global environmental concerns and their impact on human health. Students will discuss various affecting factors (e.g., urbanization, population pressure, climate change, atmospheric pollution, sanitation, etc.) within the context of their impacts on population throughout the world.

COURSE LEARNING OBJECTIVES
Upon completion of this course, students will:

1. Develop an understanding for the complexities of our global environment.
2. Recognize the environmental influences on human health.
3. Recognize anthropogenic influences on the environment.
4. Assess human population and world food production.
5. Relate the impact of environmental exposures on population health nationally and globally.
6. Recognize the impact of globalization and resource management on environmental health.
7. Appreciate the importance of environmental conservation, worker protections, disaster preparedness and public health awareness.
8. Evaluate how economic, political, and social inequities contribute to environmental health disparities.

***Diversity, Equity, and Inclusion Statement*[5]**

At the University at Albany School of Public Health, we believe deeply that equity, respect, and justice are central to our united path forward. The character of our School is to stand steadfast in the face of injustice and act for the betterment of health outcomes. Racism and discrimination have no place in our work.

We are committed to creating and supporting a community diverse in every way, which includes but is not limited to: race, ethnicity, age, disability, gender, gender expression, geography, religion, academic and extracurricular interest, political beliefs, family circumstances, national origin, sexual orientation, and socioeconomic background. It is central to our mission to ensure that each member of our community has full opportunity to thrive. We recognize that all of us must embrace the responsibility and accountability for upholding these values, as they are central, not only to our mission, but also to individual growth, education excellence and the advancement of knowledge.

The University at Albany is committed to a campus environment that supports diversity, equity and inclusion and will provide support to individuals who report incidents of bias or hate. We encourage any campus community member who experiences or witnesses a bias act or hate crime to report this incident by using the Bias Incident Reporting Form. For more information, visit https://www.albany.edu/diversity-and-inclusion.

PUBLIC HEALTH KNOWLEDGE DOMAINS AND COMPETENCIES:

The Council on Education in Public Health (CEPH) requires accredited degree programs in public health to address certain knowledge domains and competencies.

Public Health Knowledge Domains:

This course addresses the following knowledge domains for the Public Health BS:

1. The history and philosophy of public health as well as its core values, concepts, and functions across the globe and society
2. Concepts of population health, and the basic processes, approaches, and interventions that identify and address the major health related needs and concerns of populations
3. The socioeconomic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities
4. The basic concepts of public health-specific communication, including technical and professional writing and the use of mass media and electronic technology

Public Health BS Foundational Competencies:

This course addresses the following program competencies:

Foundational BS Competencies	Assessment Methods
The ability to communicate public health information, in both oral and written forms, through a variety of media and to diverse audiences	Homework Assignments 1-6; in-class discussions
The ability to locate, use, evaluate and synthesize public health information	Homework Assignments 1-6

PUBLIC HEALTH CROSS-CUTTING CONCEPTS:

Students will be exposed to these cross-cutting concepts necessary for success in the workplace, further education, and lifelong learning:

- Advocacy for protection and promotion of the public's health at all levels of society
- Critical thinking and creativity
- Cultural contexts in which public health professionals work

UALBANY GENERAL EDUCATION COMPETENCIES:

In addition, this course addresses the following University at Albany General Education Competencies:

- Advanced Writing
- Critical Thinking
- Oral Discourse

COURSE MATERIALS:

Website: Lecture slides, assignments, and other course materials will be posted on the Blackboard Learning System course website. Students registered for the class can access the course material by logging on through the MyUAlbany link to Blackboard Learning System. Lecture slides and readings will be posted as Adobe Acrobat files (i.e., with .pdf extensions). Assignments will be distributed as Word (.doc) files so that you can use the files as a template for typing your assignments. As this is a remote learning course, the website will be where you turn in your assignments and participate in class discussions.

Required textbook: Our Global Environment: A Health Perspective, 8th Edition. By Anne Nadakavukaren & Jack Caravanos (2020). ISBN 10: 1-4786-3771-4; ISBN 13: 978-1-4786-3771-4 available at the UAlbany bookstore and at online retailers. This book is also available as an e-book: Google Play (cheapest online purchasing option), Kindle, VitalSource (you can also choose to rent it here).

COURSE REQUIREMENTS:

The course will consist of weekly modules that are held in-person Tuesday and Thursday. Each week, you will be responsible for completing readings and assignments as posted. There will **be lecture-based sessions by the professor or guest speakers** and active learning activities including class discussions that will further enforce and highlight concepts covered in the readings and lectures of each module. All reading and other course assignments are required.

Attendance (7%):

Class attendance will be taken and will account for 7% of the final grade.

Homework Assignments (18%):

There will be **6 homework assignments** during the semester. Assignments will consist of responding to readings or other course material through a writing or other assignment. Your homework is expected to be your own work with appropriate citations as necessary. A plagiarized assignment will be assigned a zero (*see below for what is considered plagiarism*) and the instructor may report the incident to the University. You are expected to turn in your assignments on time. Assignments that are late will be deducted 1 point per day for three days. Assignments handed in more than three days late will receive a grade of zero (0) points.

Examinations (75%):

There will be three in-class exams consisting of multiple choice and short-answer questions. Each will cover approximately one third of the course. A final exam will be given during exam week. The final exam will cover selected lectures that will be identified prior to the exam. The final exam will be optional. Your exam grade will be based on your three best scores among the three in-class exams and the final exam, which will be equally weighted.

Cell Phones: The use of cell phones during class is prohibited.

Attendance: All class sessions will be held in person. Contact the professor or TA at least one day in advance if you are unable to attend class for an excused absence. You are solely responsible for making up work you have missed in the missed class session.

For your convenience, the link to the University's Medical Excuse Policy: http://www.albany.edu/health_center/medicalexcuse.shtml and the Student Attendance and Absence Accommodation Policy web-link is (http://www.albany.edu/undergraduate_bulletin/regulations.html). The link to the electronic form to request accommodation may be accessed here: http://bit.ly/UAlbany_AbsenceNote

Inclusive Learning Environment Statement: *It is expected that each of you will contribute to creating an inclusive and respectful learning environment. You are expected to treat each other with dignity and value differences in perspectives. Hurtful or hateful language and actions will not be tolerated.*

Gender identity and pronoun use: Please let me know of your preferred gender pronoun(s) and how best to address you in class and via email. I use male pronouns for myself (he/him/his) and you may address me as “Professor” or “Dr. Spink.”

UNIVERSITY RESOURCES AND POLICIES:

Academic Integrity: Students are expected to abide by the University at Albany's Code of Academic Integrity. Collaboration is encouraged in many instances; however, work submitted for academic credit must be the **student's own work**. Academic dishonesty (refer to http://www.albany.edu/undergraduate_bulletin/regulations.html), may result in a failing grade for the course and the student(s) may be subject to sanctions by the University.
Talking, discussions and the use of any electronic device are not permitted during quizzes and exams. It will be assumed that students who are talking are cheating and will be given a failing grade for the exam or quiz, which may lead to failure of the course and additional disciplinary action by the University.
Plagiarism: As stated on the Undergraduate Academic Regulations website (http://www.albany.edu/undergraduate_bulletin/regulations.html) plagiarism is defined as:

"Presenting as one's own work the work of another person (for example, the words, ideas, information, data, evidence, organizing principles, or style of presentation of someone else). Some examples of plagiarism include copying, paraphrasing, or summarizing without acknowledgment, submission of another student's
work as one's own, the purchase/use of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. Students are responsible for understanding legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness. Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project ***or website****; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else."*

Students are strongly advised to avoid placing themselves in situations where academic integrity may be compromised. Please refer to the University's website regarding Undergraduate Academic Regulations (http://www.albany.edu/undergraduate_bulletin/regulations.html).

Accommodations: Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning, and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518- 442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations. This statement appears on our University website as part of our Statement of Reasonable Accommodation Policy In Response to the Americans with Disabilities Act that can be found at the following link: https://portal.itsli.albany.edu/documents/14702/27405/ep-hp-RAP-UpdatedSummer2016.pdf

Mental Health: As a student there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. The University at Albany Counseling and Psychological Services (CAPS) provides free, confidential services including individual and group psychological

counseling and evaluation for emotional, social, and academic concerns. Students may consult with CAPS staff by telephone, email or in person regarding issues that impact them or someone they care about. CAPS is located in Suite 104 at 400 Patroon Creek Blvd near the UAlbany uptown campus. For questions or to make an appointment, call (518) 442-5800. Email consultation@albany.edu, or visit www.albany.edu/caps/ for hours of operation, directions, and additional information.

If your life or someone else's life is in danger, please call 911. If you are in a crisis and need help right away, please call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).
Students dealing with heightened feelings of sadness or hopelessness, increased anxiety, or thoughts of suicide may also text "GOT5" to 741741 (Crisis Text Line).

Title IX Reporting: "Title IX of the Education Amendments of 1972 is a federal civil rights law that prohibits discrimination on the basis of sex in federally funded education programs and activities.
The SUNY-wide Sexual Violence Prevention and Response Policies prohibit offenses defined as sexual harassment, sexual assault, intimate partner violence (dating or domestic violence), sexual exploitation, and stalking. The SUNY-wide Sexual Violence Prevention and Response Policies apply to the entire University at Albany community, including students, faculty, and staff of all gender identities. The University at Albany provides a variety of resources for support and advocacy to assist individuals who have experienced sexual offenses.

Confidential support and guidance can be found through the Counseling Center (518-442-5800, https://www.albany.edu/counseling_center/), the University Health Center (518-442-5454, https://www.albany.edu/health_center/), and the Interfaith Center (518-489-8573, https://www.albany.edu/spirituality/onCampus.shtml). Individuals at these locations will not report crimes to law enforcement or university officials without permission, except for in extreme circumstances, such as a health and/or safety emergency. Additionally, the Advocates at the University at Albany's Advocacy Center for Sexual Violence are available to assist students without sharing information that could identify them (518-442-CARE, https://www.albany.edu/advocacycenter/). Sexual offenses can be reported non- confidentially to the Title IX Coordinator within The Office for Equity and Compliance (518-442-3800, https://www.albany.edu/equity-compliance/, Building 25, Room 117) and/or the University Police Department (518-442-3131, http://police.albany.edu/).

Please note, faculty members are considered "responsible employees" at the University at Albany, meaning that they are required to report all known relevant details about a complaint of sexual violence to the University's Title IX Coordinator, including names of anyone involved or present, date, time, and location.

In case of an emergency, please call 911."

GRADING:

Total score for the class:

Course Average	Final Grade
93-100	A
90-92	A-
88-89	B+
83-87	B
80-82	B-
78-79	C+
73-77	C
70-72	C-
68-69	D+
63-67	D
60-62	D-
< 60	E

The grading scale above is tentative. The ranges may be adjusted downward (i.e., to lower values), but not upward.

COURSE SCHEDULE:

Session # Date	Topic	Lecturer	Reading Assignment*	Take Home Homework Assignments
Module 1: Ecology and Environmental Health				
Session 1 Thursday, January 19	**Lec 1**: Introduction to Environmental Health	Spink	Introduction, pp. 1-4	
Session 2 Tuesday, January 24	**Lec 2**: Ecological Principles Part 1	Spink	Chapter 1 Additional Reading #1	
Session 3 Thursday, January 26	**Lec 3**: Ecological Principles Part 2	Spink	Chapter 1	
Session 4 Tuesday, January 31	**Lec 4**: Human Population Part 1	Spink	Chapter 2	Assignment #1 due
Session 5 Thursday, February 2	**Lec 5**: Human Population Part 2	Spink	Chapter 2	

Session # Date	Topic	Lecturer	Reading Assignment*	Take Home Homework Assignments
Session 6 Tuesday, February 7	**Lec 6**: World Food Production	Spink	Chapter 2 Additional Reading #2	
Session 7 Thursday, February 9	**Lec 7**: World Nutrition and Disease	Spink	Chapters 3,7,8	
Session 8 Tuesday, February 14	**Lec 8**: Impacts of growth on Ecosystems Part 1	Spink	Chapter 4	Assignment #2 due
Session 9 Thursday, February 16	**EXAM 1 (Covers Lectures 1 through 8)**			

Session # Date	Topic	Lecturer	Reading Assignment*	Take Home Homework Assignments
Module 2: The Context of Environmental Health				
Session 10 Tuesday, February 21	**Lec 9**: Environmental Disease Part 1	Spink	Chapter 5	
Session 11 Thursday, February 23	**Lec 10**: Environmental Disease Part 2 - Cancer	Spink	Chapter 5 Additional Reading #3	
Session 12 Tuesday, February 28	**Lec 11**: Toxic Substances Part 1	Spink	Chapter 6	
Session 13 Thursday, March 2	**Lec 12**: Toxic Substances Part 2	Spink	Chapter 6	Assignment #3 due

Session # Date	Topic	Lecturer	Reading Assignment*	Take Home Homework Assignments
Session 14 Tuesday, March 7	**Lec 13**: Pesticides	Spink	Chapter 7	
Session 15 Thursday, March 9	**Lec 14**: Radiation Part 1	Spink	Chapter 9	
Session 16 Tuesday, March 21	**Lec 15**: Radiation Part 2	Spink	Chapter 9	
Session 17 Thursday, March 23	**Lec 16**: Solid and Hazardous Wastes	Spink	Chapter 15	
Session 18 Tuesday, March 28	**EXAM 2 (Covers Lectures 9 through 16)**	Spink		

Session # Date	Topic	Lecturer	Reading Assignment*	Take Home Homework Assignments
Module 3: The Practice of Environmental Health				
Session 19 Thursday, March 30	**Lec 17**: Environmental Justice	Spink	Additional Reading #4	
Session 20 Tuesday, April 4	**Lec 18**: One Health	Spink		
Session 21 Thursday, April 6	**Lec 19**: Air Pollution Part 1	Spink	Chapter 11 Additional Reading #5	Assignment #4 due
Session 22 Tuesday, April 11	**Lec 20**: Air Pollution Part 2	Spink	Chapter 11	
Session 23 Thursday, April 13	**Lec 21**: Water Resources and Water Pollution	Spink	Chapters 14,15	Assignment #5 due
Session 24 Tuesday, April 18	**Lec 22**: Water Pollution and Plastics in the Environment	Spink	Chapters 14, 15	

Session # Date	Topic/	Lecturer	Reading Assignment*	Take Home Homework Assignments
Session 25 Thursday, April 20	**Lec 23**: Climate Change Part 1	Spink	Chapters 10 Additional Reading #6	
Session 26 Tuesday, April 25	**Lec 24**: Climate Change Part 2	Spink	Chapter 10	Assignment #6 due
Session 27 Thursday, April 27	**EXAM 3 (Covers Lectures 17 through 24)**	Spink		
Session 28 Tuesday, May 2	**Review Session for the Final Exam**	Spink		

***Chapters listed are those in the class text: *Our Global Environment: A Health Perspective*, 8th Edition. By Anne Nadakavukaren & Jack Caravanos (2020). Additional readings for Assignments 1 – 6 are listed below:**

1) Xu R, Yu P, Abramson MJ, Johnston FH, Samet JM, Bell ML, Haines A, Ebi KL, Li S, Guo Y (2020) Wildfires, Global Climate Change, and Human Health. *N Engl J Med* 383(22):2173-2181. doi: 10.1056/NEJMsr2028985. Epub 2020 Oct 9.
2) Colgrave ML, Dominik S, Tobin AB, Stockmann R, Simon C, Howitt CA, Belobrajdic DP, Paull C, Vanhercke T (2021) Perspectives on Future Protein Production. *J Agric Food Chem* 69(50):15076-15083. doi: 10.1021/acs.jafc.1c05989. Epub 2021 Dec 9.
3) Hanna-Attisha M, LaChance J, Sadler RC (2016) Champney Schnepp A. Elevated Blood Lead Levels in Children Associated with the Flint Drinking Water Crisis: A Spatial Analysis of Risk and Public Health Response. *Am J Public Health*. 2016 Feb;106(2):283-90. doi: 10.2105/AJPH.2015.303003. Epub 2015 Dec 21.
4) Payne-Sturgis DC, Gee G., Cory-Slechta DA (2021) Confronting racism in environmental health sciences. *Environmental Health Perspectives*, 4 May 2021 CID: 055002https://doi.org/10.1289/EHP8186.
5) Semenza JC, Rocklöv J, Ebi KL (2022) Climate Change and Cascading Risks from Infectious Disease. Infect Dis Ther 2022 Aug;11(4):1371-1390. doi: 10.1007/s40121-022-00647-3. Epub 2022 May 19.
6) He Q, Silliman BR. (2019) Climate Change, Human Impacts, and Coastal Ecosystems in the Anthropocene. *Curr. Biol.* 2019 Oct 7;29(19):R1021-R1035. doi: 10.1016/j.cub.2019.08.042.

University at Albany
School of Public Health

HSPH332 Introduction to Biostatistics
LC13, Mon/Wed 4:30-5:50PM
Spring 2023 (Class #6325)

INSTRUCTOR:
Igor B. Kuznetsov, PhD, Associate Professor
Email: ikuznetsov@albany.edu
Office: Health Sciences Campus, rm.145, One University Place, Rensselaer, NY
Phone: 518-402-0415
OFFICE HOURS: Mon/Wed, 3:00PM-4:20PM in **Taconic, room 330**; or by appointment;

TEACHING ASSISTANT: None

COURSE CREDIT HOURS: 3 credits
COURSE PREREQUISITES/COREQUISITES: Grade B or better on MAT 108

COURSE DESCRIPTION:
This course is designed to teach public health students the basic principles of biostatistics. It can be a first course in biostatistics for those students who will use the knowledge they acquire to enable them to continue learning more advanced techniques in future statistical and biostatistical course work. It can also serve as the necessary base course in biostatistics for those who will go no further in acquiring advanced skills in biostatistics but who can use the knowledge they acquire to intelligently read journal articles that use biostatistical methods, interact effectively with professional biostatisticians in collaborative endeavors and understand the terminology of one of the core disciplines of public health. This course will introduce you to basic concepts of descriptive statistics; probability theory; probability distributions; estimation; hypothesis testing; regression and correlation. In addition, students will learn how to use a computer program to analyze data.

COURSE LEARNING OBJECTIVES:

Upon completion of this course, students will:

- Be able to use and understand the principal numeric and graphical techniques to display and summarize medical and health related data
- Be able to understand the basic principles of probability and how they relate to biostatistics
- Be familiar with the common probability distributions used in statistics
- Be able to know what drawing a random sample from a population means and why it is important
- Be familiar with the concept of statistical inference
- Be able to estimate the value of various population parameters from a sample of data

- Be able to test the hypothesis that the value of a population parameter equals a certain value
- Be able to apply most common statistical tests to compare two or more samples of data
- Be able to discuss and explain what biostatistics is and how it is used in the field of public health
- Be able to understand the common statistical techniques and terminology used in studies that are presented in the popular press and health related journals

Diversity, Equity, and Inclusion Statemen

At the University at Albany School of Public Health, we believe deeply that equity, respect, and justice are central to our united path forward. The character of our School is to stand steadfast in the face of injustice and act for the betterment of health outcomes. Racism and discrimination have no place in our work.

We are committed to creating and supporting a community diverse in every way, which includes but is not limited to: race, ethnicity, age, disability, gender, gender expression, geography, religion, academic and extracurricular interest, political beliefs, family circumstances, national origin, sexual orientation, and socioeconomic background. It is central to our mission to ensure that each member of our community has full opportunity to thrive. We recognize that all of us must embrace the responsibility and accountability for upholding these values, as they are central, not only to our mission, but also to individual growth, education excellence and the advancement of knowledge.

The University at Albany is committed to a campus environment that supports diversity, equity and inclusion and will provide support to individuals who report incidents of bias or hate. We encourage any campus community member who experiences or witnesses a bias act or hate crime to report this incident by using the Bias Incident Reporting Form. For more information, visit https://www.albany.edu/diversity-and-inclusion.

PUBLIC HEALTH FOUNDATIONAL KNOWLEDGE DOMAINS AND COMPETENCIES:

The Council on Education in Public Health (CEPH) requires accredited degree programs in public health to address certain knowledge domains and competencies.

Public Health Knowledge Domains:

This course addresses the following knowledge domains for the Public Health BS:

1. Role and Importance of Data in Public Health
   This course provides an introduction to
   - Basic concepts of data collection
   - Data usage
   - Evidence-based approaches

PUBLIC HEALTH CROSS-CUTTING CONCEPTS:

Concept	Exposure Experience
Research Methods	Students are exposed to basic concepts of descriptive statistics, probability theory, probability distributions, estimation, hypothesis testing, regression and correlation. In addition, students use a computer program to analyze data. Students are also exposed to common statistical techniques and terminology used in studies that are presented in the popular press and health related journals.

UALBANY GENERAL EDUCATION COMPETENCIES:

Critical Thinking:

- Formulate complex questions, problems, and hypotheses clearly and precisely, and apply familiar and new concepts in developing solutions and conclusions
- Test hypotheses against relevant criteria and standards, accounting for the facts

COURSE MATERIALS:

Required textbook: Rosner, B. "Fundamentals of biostatistics", the 7th edition (ISBN-10: 0538733497). You can also buy a used 6th edition or 7th International edition (all 6th and 7th editions are the same, ***except for page numbers***).
Required on-line statistical software: Can be found at http://www.statcrunch.com/. Each student **MUST** purchase a subscription (the current price is $14.99). To get a subscription, click 'Register' in the upper right corner of the main page -> then click 'Register' on the new page -> click 'Students' tab -> 'Purchase' -> follow instructions.

COURSE REQUIREMENTS:

Your grade in this course will be based on the following: (a) five homework assignments, (b) midterm exam, (c) final exam, (d) six quizzes, (e) class attendance.

- **Homework Assignments (5):** Each homework assignment will test the knowledge of statistical concepts and methods from a specific section of the course, ability to place public health questions into a statistical framework, and ability to apply a computer program to analyze various types of data and to interpret the results of the analyses. Homework assignments will be posted on the Blackboard as MS Word files, you will type your answers in these files and upload them to the Blackboard.
- **Quizzes (6):** Each quiz will test the knowledge of basic statistical concepts and methods from a section of the course covered in a specific lab.
- **Computer Labs (6):** During computer labs students will learn how to select a statistical methodology suitable for analyzing a specific dataset, how to apply a computer program

to perform the analysis, and how to interpret its results. Each lab will cover a specific section of the course.

Assignment Descriptions

Homework 1 will cover material from lectures 1-5 and computer lab 1. Due date is February 10.
Homework 2 will cover material from lectures 6-9 and computer lab 2. Due date is February 24.
Homework 3 will cover material from lectures 10-14 and computer labs 3-4. Due date is April 07.
Homework 4 will cover material from lectures 15-16 and computer lab 5. Due date is April 15.

Homework 5 will cover material from lectures 17-19 and computer lab 6. Due date is April 27.

Assignments will be graded according to the grading schema described below.

Examinations

Midterm exam will cover material from lectures 1-9 and labs 1-2. Exam date is March 08, 4:30PM-5:50PM.
Final exam will cover material from lectures 10-19 and labs 3-6. Exam date is May 04, 3:30PM-5:30PM.
Exams will be graded according to the grading schema described below.

GRADING:

Midterm exam: 20% of the final grade; Final exam: 25% of the final grade; Homework: 30% of the final grade; Quizzes: 15% of the final grade; Lab attendance: 5% of the final grade; Lecture attendance: 5% of the final grade; One quiz with the lowest score will be excluded when calculating the final grade. The final class score will be rounded to one decimal point.
Grades will be determined as follows:

Percentage	Grade
[95-100%]	A
[90-95%[	A-
[85-90%[	B+
[80-85%[	B
[75-80%[	B-
[70-75%[	C+
[65-70%[	C
[60-65%[	C-
[55-60%[	D+
[50-55%[	D
[40-50%[	D-
<40%	E

CLASS POLICIES:

Attendance: Attendance is required - a part of your grade is based on attendance record. There will be a sign-in sheet for each class. **Deadlines: homework assignments that are more than 24 hours overdue will not be accepted.** An extension on due date or makeup exam/quiz/assignment will be granted only under exceptional circumstances, such as an illness confirmed by a letter from your physician.
Please refer to the University's Medical Excuse Policy (http://www.albany.edu/health_center/medicalexcuse.shtml) and Student Attendance and Absence Accommodation Policy (http://www.albany.edu/undergraduate_bulletin/regulations.html)

Absence due to religious observance: Please refer to New York State Education Law Section 224-A (https://www.nysenate.gov/legislation/laws/EDN/224-A)

No cell phone usage during classes. Please silence your phone when in class.

SCHOOL AND UNIVERSITY RESOURCES AND POLICIES:

Academic Integrity: All students need to be aware of the University at Albany's standards of conduct and other regulations available in the Undergraduate Bulletin (http://www.albany.edu/undergraduate_bulletin/regulations.html). This document itemizes the standards related to academic dishonesty, provides complete definitions of each type of misconduct and summarizes the penalties for violations of academic integrity. Every student has the responsibility to become familiar with these standards of academic integrity and to behave accordingly.

Accommodations
Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning and psychiatric disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Access and Inclusion Student Services (DAISS) (Campus Center 130, 518-442-5490, daiss@albany.edu). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations.

Mental Health
As a student there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. The University at Albany Counseling and Psychological Services (CAPS) provides free, confidential services including individual and group psychological counseling and evaluation for emotional, social and academic concerns. Given the COVID pandemic, students may consult with CAPS staff remotely by telephone, email or Zoom appointments regarding issues that impact them or someone they care about. For questions or

to make an appointment, call (518) 442-5800 or email consultation@albany.edu. Visit www.albany.edu/caps/ for hours of operation and additional information.

If your life or someone else's life is in danger, please call 911. If you are in a crisis and need help right away, please call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).

Students dealing with heightened feelings of sadness or hopelessness, increased anxiety, or thoughts of suicide may also text "GOT5" to 741741 (Crisis Text Line).

In case of an emergency, please call 911

COURSE SCHEDULE:

Date	Topic	Readings and Assignments
Jan-18	Introduction Lecture 1: Populations and samples	**Readings Due on Jan 23:** ☐ Ch. 1 General Overview ☐ Ch. 6.2 Relationship Between Population and Sample ☐ Ch. 6.3 Random-Number Tables ☐ Ch. 6.4 Randomized Clinical Trials
Jan-23	Lecture 2: Summarizing data-1	**Readings Due on Jan 25:** ☐ Ch. 2.1 Introduction (Descriptive Statistics) ☐ Ch. 2.7 Grouped Data ☐ Ch. 2.8 Graphic Methods (skip the boxplot, we will cover it next time) ☐ Ch. 9.1 Data scales (skip 1st paragraph of this section)
Jan-25	Lecture 3: Summarizing data-2	**Readings Due on Jan 30:** ☐ Ch. 2.2 Measures in location(skip geometric mean) ☐ Ch. 2.4 Measures of Spread ☐ Read about the boxplot in Ch. 2.8
Jan-30	Lecture 4: Probability distributions-1	**Readings Due on Feb 01:** ☐ Ch. 3.1 Introduction (Probability) ☐ Ch. 3.2 Definition of Probability ☐ Ch. 3.3 Some Useful Probabilistic Notation ☐ Ch. 3.4 The Multiplication Law of Probability ☐ Ch. 4.2 Random Variables ☐ Ch. 4.3 Probability-Mass Function for a Discrete Random Variable ☐ Ch. 4.4 Expected Value of a Discrete Random Variable ☐ Ch. 4.5 Variance of a Discrete Random Variable (skip Eq. 4.1)
Feb-01	Lecture 5: Probability distributions-2	**Readings Due on Feb 06:** ☐ Ch. 4.6 Cumulative-Distribution Function of a Discrete Random Variable ☐ Ch. 4.7 Permutations and Combinations (skip the permutations in 4.7) ☐ Ch. 4.8 The Binomial Distribution (skip 'Using electronic tables' in 4.8) ☐ Eq. 4.7 in Ch. 4.9 Expected Value and Variance of the Binomial Distribution
Feb-06	**Computer lab and** **Quiz #1 (material from lectures 1 – 5 is covered)**	**Computer Lab 1 notes Due today**

Feb-08	Lecture 6: Probability distributions-3	**Readings Due on Feb 13:** ☐ Ch. 5.1 Introduction (Continuous Probability Distributions) ☐ Ch. 5.2 General Concepts ☐ Ch. 5.3 The Normal Distribution
Feb-13	Lecture 7: Probability distributions-4	**Readings Due on Feb 15:** ☐ Ch. 5.4 Properties of the Standard Normal Distribution ☐ Ch. 5.5 pages 120 – 122 Conversion from an $N(\mu,\sigma^2)$ Distribution to an $N(0,1)$ Distribution
Feb-15	Lecture 8: One-sample inference-1	**Readings Due on Feb 20:** ☐ Ch. 6.1 Introduction ☐ Ch. 6.5 Estimation of the Mean of a Distribution (stop on page 168 before 'Interval estimation')
Feb-20	Lecture 9: One-sample inference-2	**Readings Due on Feb 22:** ☐ Read 'Interval estimation' in Ch. 6.5 Estimation of the Mean of a Distribution (p. 168-175, skip the derivations on p. 171 and everything related to Eq. 6.7) ☐ Read 'Point estimation' in Ch. 6.8 Estimation for the Binomial Distribution
Feb-22	**Computer lab and** **Quiz #2 (material from lectures 6 – 9 is covered)**	**Computer Lab 2 notes due today**
Feb-27	Lecture 10: One-sample inference-3	**Readings Due on Mar 01** ☐ Ch. 7.1 Introduction ☐ Ch. 7.2 General Concepts
Mar-01	Lecture 11: One-sample inference-4	**Readings Due on Mar-20** ☐ Ch. 7.3 Introduction ☐ Ch. 7.4 (stop before one-sample z-test, skip Eq. 7.10) In both chapters, focus on the p-values and the p-value method ☐ Eq. 7.30 and Example 7.40 in Ch. 7.7 The Relationship Between Hypothesis Testing and Confidence Intervals
Mar-06	Review - 1	
Mar-08	**Midterm exam**	

Mar-20	**Computer lab and Quiz #3 (material from lectures 10 -11 covered)**	**Computer Lab 3 notes due today**
Mar-22	Lecture 12: Two-sample inference-1	**Readings Due on Mar 27:** ☐ Ch. 8.1 Introduction ☐ Ch. 8.2 The Paired *t* Test ☐ Ch. 8.6 Testing for the Equality of Two Variances (stop before section "The F-test")
Mar-27	Lecture 13: Two-sample inference-2	**Readings Due on Mar 29:** ☐ Read section "The F-test" in Ch. 8.6 Testing for the Equality of Two Variances (skip Eq. 8.15)
Mar-29	Lecture-14: Two-sample inference-3	**Readings Due on Apr 03:** ☐ Ch. 8.4 Two-Sample *t* Test for Independent Samples with Equal Variances (skip equations 8.7-8.9, 8.11) ☐ Ch. 8.7. Two-Sample *t* Test for Independent Samples with Unequal Variances (skip equations 8.17-21, stop on Figure 8.10)
Apr-03	**Computer lab and Quiz #4 (material from lectures 12-14 is covered)**	**Computer Lab 4 notes due today**
Apr-05	Lecture 15: Categorical data analysis-1	**Readings Due on Apr 10:** ☐ Ch. 10.1 Introduction ☐ Ch. 10.2 Two-Sample Test for Binomial Proportions (skip Equations 10.1-10.2 and part 2 of Equation 10.3; stop on p. 359 at "Significance Testing Using the Contingency Table Approach") ☐ Ch. 10.3 Fisher's Exact Test (skip Equations 10.8-10.9 and details about the hypergeometric distribution)
Apr-10	Lecture 16: Categorical data analysis-2	**Readings Due on Apr 12:** ☐ Ch. 10.4 Two-Sample Test for Binomial Proportion for Matched-Pair Data (McNemar's Test) (skip section "Normal Theory Test") ☐ Read section "Exact test" on pages 377-380
Apr-12	**Computer lab and Quiz #5 (material from lectures 15-16 is covered)**	**Computer Lab 5 notes due today**

Apr-17	Lecture 17: Correlation and regression-1	**Readings Due on Apr 19:** ☐ Lecture 17 Notes ☐ The first page of Ch. 11.7 The Correlation Coefficient (p. 452, skip Definition 11.15) ☐ Ch. 11.8 Statistical Inference for Correlation Coefficients (section "One-sample t-test for correlation coefficient", skip part (3) of Equation 11.20)
Apr-19	Lecture 18: Correlation and regression-2	**Readings Due on Apr 24:** ☐ Lecture 18 Notes ☐ Ch. 11.2 General Concepts ☐ Ch. 11.3 Fitting Regression Lines – The Method of Least Squares (skip Definitions 11.4 – 11.5, Equation 11.3, and Example 11.8) ☐ Ch. 11.4 Inferences About Parameters from Regression Lines (section 't-test for simple linear regression', skip part (2) of Equation 11.8)
Apr-24	**Computer Lab and** **Quiz #6 (material from lectures 17-19 is covered)**	**Computer Lab 6 notes due today**
Apr-26	Lecture 19: Multi-sample inference (ANOVA)	**Readings Due on May 01:** ☐ Ch. 12.1 Introduction to the One-Way Analysis of Variance ☐ Ch. 12.3 Hypothesis Testing in One-Way ANOVA-Fixed Effects Model (skip Equation 12.5, Example 12.3, and part (3) of Equation 12.6) ☐ Ch. 12.4 Comparisons of Specific Groups in One-Way ANOVA (skip Equations 12.7 - 12.10 and part (3) of equation 12.12, stop before 'Linear Contrasts' section)
May-01	Review - 2	
May-04	**Final Exam, 3:30-5:30PM**	

Disclaimer

I reserve a right to adjust this syllabus if some unforeseen events that interfere with class progress occur.

LAW OF CLIMATE CHANGE: DOMESTIC & TRANSNATIONAL
SPRING 2020

RPAD 399-0007 (10110)
RPOS 399-0011 (10012)
January 23 – May 5, 2020
Tuesday and Thursday 1:15-2:35
Social Sciences Room 255
Professor Eleanor Stein
Office hours: by appointment
E-mail: estein@albanylaw.edu
Preferred pronouns: she, her

SYLLABUS

Course Overview

The objectives of this course are (1) to develop your awareness of the severity, causes, and responses to the climate change crisis, (2) to enable you to understand and use the law as a tool to effect climate change policy and actions on the part of government and corporations, and (3) to develop your skills in reading and understanding climate change-related news and information.

As you will see, this is a living topic: climate change law is in a state of constant change – there are new laws proposed in Congress and in the New York State legislature, court challenges and decisions, presidential or governor actions and announcements every week. Some of the cases we will be studying may be decided during the course: our first study will be a court decision rendered Friday January 17. Accordingly, the syllabus will be modified to reflect this ongoing process.

Course Materials

This course consists of four modules, each centered around one important aspect of climate change law. We will take time in the first few classes to develop a basic understanding of the current state of climate change science: everything in this field depends upon the science. In addition to the required readings listed below, we will have the great advantage of a visiting lecturer: Professor Mathias Vuille, a working climatologist in the UAlbany Department of Earth and Atmosphere Sciences, who will help us navigate the scientific issues and to recognize the scale of the crisis.

The modules are: I. Climate change and human rights; II. International law of climate change; III. Federal law of climate change; and IV. Climate change law in the states and cities. In each of the modules, there are videos, power points and readings posted on Blackboard. In the category Getting Started, there is also a Library Folder, which contains some of the major sites for research and going deeper into the cases we are reading and discussing.

Here are the modules and the working schedule. Additional materials will be available on Blackboard, organized by module.

INTRODUCTION: Overview of the science of climate change
January 23 – 28, February 4, 2020

Readings: - Bill McKibben, EAARTH, chapters 1 and 2.
-Decision of the U.S. Circuit Court of Appeals for the 9th Circuit (January 17, 2020) in *Juliana v. U.S.*, and the decision can be found at https://static1.squarespace.com/static/571d109b04426270152febe0/t/5e22101b7a850a06acdff1bc/1579290663460/2020.01.17+JULIANA+OPINION.pdf.
-Greta Thunberg, *Speech at Madrid climate talks*, at https://www.democracynow.org/2019/12/12/greta_thunberg_speech_cop_time_magazine?utm_source=Democracy+Now%21&utm_campaign=54ec110929-Daily_Digest_COPY_01&utm_medium=email&utm_term=0_fa2346a853-54ec110929-192216053.

MODULE I – CLIMATE CHANGE AND HUMAN RIGHTS
Objectives: Learning the fundamentals of the human rights regime and the environmental justice antecedents of climate justice jurisprudence, domestic and international; appreciating the domestic law applications of human rights principles.

February 6-14, 2020
Reading: *Juliana v. United States, Opinion*, (U.S. Circuit Court of Appeals for the 9th Circuit, January 17, 2020), reversing *Juliana v. U.S.*,__ F. Supp. 3d __ (D.C. Oregon 2016) https://cdn.ca9.uscourts.gov/datastore/opinions/2020/01/17/18-36082.pdf
[suggested material: See www.ourchildrenstrust.org for commentary].

Urgenda v. State of the Netherlands, Decision of the Supreme Court of the Netherlands

Sheila Watt-Cloutier, *Petition to the Inter American Commission on Human Rights Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States,* Executive Summary

THE OSLO PRINCIPLES

MODULE II – INTERNATIONAL LAW OF CLIMATE CHANGE
Objectives: to become familiar with the nature and role of international law, its differences from domestic law; to learn to research primary sources to track developments in the global climate negotiation process; and to prepare and conduct a multi-party, high-stakes negotiation on behalf of your client.
February 18-March 5, 2020
Reading:
United Nations Framework Convention on Climate Change (UNFCCC)(1992)
Kyoto Protocol (2005)
Copenhagen Accord (2009)
The Paris Agreement (2015)

MODULE III – FEDERAL LAW OF CLIMATE CHANGE
Objectives: Differentiating the legal strategic approaches to climate change litigation and legislation; familiarizing with the role of federal regulation, and the relationship between statutory and common law litigation. Recognizing the current US administration's attempts to roll back federal climate change law.

March 10-12, March 24-April 7
Reading: Clean Air Act litigation:
Massachusetts v. Environmental Protection Agency, 549 U.S. 497 (2007)
EPA Determination Denying Reconsideration of the Endangerment Finding (2010)
The *Clean Power Plan* stay orders (Supplement)
The Trump Administration America *First Energy Plan* (Supplement)

Common law litigation:
American Electric Power v. Connecticut, 564 U.S. 410 (2011)
Native Village of Kivalina v ExxonMobil, 696 F3d 849 (9th Circuit 2012), cert den'd 569 US 1000 (2013)

SPRING BREAK – March 14 ~ March 20

MODULE IV: STATE AND CITY INITIATIVES

Objectives: Recognizing the federalism dimension: preemption and cooperation; appreciating the diversity and critical importance of state and local legal action on climate change; developing civil litigation and team work skills; and applying climate justice principles.
April 9-21
Reading:
State Statutes:
California Global Warming Solutions Act
New York Climate Leadership and Community Protection Act (excerpts)
Litigation: States and cities take the fossil fuel industry to court:
City of New York v. B.P., Chevron (U.S. District Court 2018)
New York State v. Exxon (U.S. District Court 2019)

THE WORK OF THE COURSE:
The course will be posted on Blackboard. Some assignments may be given and handed in electronically: hard copy will be required for most written assignments. There will also be some discussion postings and some group work. We will take advantage of the availability of experts in the field to come to class and share their experience with us. We will rely heavily on primary materials provided in your supplement, which will be available at the Bookstore.

The work of this course will be carried out in several forms:

- Class meetings
- Negotiation of implementation of the Paris climate agreement since the withdrawal of the US (preparation + in class exercise)
- Preparing a litigation document in a state case
- A final paper or presentation. There will be a list of possible topics and students are also free to propose their own topic, subject to consultation with and approval by Professor Stein.

Your final grade will be based upon the following factors and will consider these indices of professionalism:

- Class participation (preparedness and active presence in class. This includes presentations to the class by each student of specific assigned cases) – 20%

- Negotiation, state case, other assignments – 30%

- Final paper or presentation – 50%

My Expectations
Cell Phones: While in class, your phones must be turned off. A ringing or vibrating phone is distracting. If you are expecting a time sensitive or health-related phone call during the time that the class is meeting, inform me in advance and we will decide together if an exception is warranted for that class time.

Computer Use: You can use iPads and laptops only for note taking or looking up information needed during the class. All other uses are strictly prohibited during class.

Lateness: I do not accept late submissions. This is how it works in the legal profession: there just is no such thing as filing late. The only exception is that you can request a brief extension from me in writing, in advance, just as lawyers have to do with judges. If I

decide the reason for the extension is acceptable, and that your late filing does not hurt the work of other students, I will grant it.

Plagiarism: I am looking for your original work. In legal thinking there is really no wrong answer – what I look for is you applying your own thinking and judgment to the problem before you. Copying and pasting a published analysis of a case is not the work of this course and I will certainly spot it. You are encouraged to quote from the decisions and other reading, as long as this material is inside quotation marks, with a citation to the source. I am not looking for formal legal citation form – the name of the document and the page or URL is sufficient (for example, if you are quoting from a decision, *Massachusetts v. EPA*, p. 6*).* Plagiarizing public sources or others' work is a violation of the attorney code of ethics, as well as UAlbany rules. In addition, I do not accept Wikipedia as an authoritative source – you may consult it to get started on your research.

Studying law: This course consists of a series of discussions and assignments in which you will do legal work. If you have not studied law this will be confusing at first, but you will get the idea quickly. I will ensure that all students, regardless of their field of study, will be able to develop legal tools, and that using this approach will make the assignments more realistic and interesting. Law students may have additional assignments.

BFIN 236: Crisis and Regulation in Financial Markets
Syllabus – Spring 2018
3 Credits

Instructor: Aaron Brauner
Office: BB 317
Email: abrauner@ualbany.edu
Phone: 518-956-8304

Meeting Place: BB 137
Meeting Time: M 05:45PM-08:35PM
Office Hours: M 04:00PM-05:30PM
(or by appointment)

Course Description

This course examines the public regulation of business, surveying the field in general but with special attention to regulatory controls in financial markets. Its subjects include the justifications and critiques of government regulation, ethical considerations in regulatory decisions, international dimensions of regulatory policy and management. We will also consider how political, legal, economic and technological processes shape regulation. This course will incorporate current topics in finance and banking paying close attention to regulation. It is imperative that you stay current with all types of reliable information. No Prerequisites.

Textbook

Financial Markets and Institutions (6th ed.) by Saunders and Cornett

Readings

In addition to the textbook chapters, I will post readings from various news sources such as the *Financial Times, Wall Street Journal, The Economist,* etc. that relate to current regulatory issues.

Grades

Exam 1	30%
Exam 2	30%
Exam 3	30%
Participation	10%

Exams will be a combination of multiple choice, short answer, and mathematical questions. Participation will be a composite score reflecting semi-weekly quizzes on textbook readings, current events, and class participation and preparedness.

The grading scale is as follows:

100-95	94-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	<60
A	A-	B+	B	B	C+	C	C-	D+	D	D-	E

Tentative Schedule

This schedule is *tentative*. It can (and probably will) change as the semester progresses. We will aim to cover 2-3 chapters per class but we will spend more time on some chapters and less on others since the focus of this course is regulation of financial markets and institutions.

Class	Day	Date	Unit	Topic	Chapter
1	M	29-Jan	Introduction	Introduction	1
2	M	05-Feb	Introduction	Determinants of Interest Rates Federal Reserve and Monetary Policy	2 4
3	M	12-Feb	Securities Markets	Money Markets Bond Markets Mortgage Markets	5 6 7
4	M	19-Feb	Securities Markets	Stock Markets Foreign Exchange Markets Derivative Markets	8 9 10
5	M	26-Feb	**Exam 1**		
6	M	05-Mar	Commercial Banks	Industry Overview	11
	M	12-Mar	NO CLASS	SPRING BREAK	
7	M	19-Mar	Commercial Banks	Regulation	13
8	M	26-Mar	Other Financial Institutions	Other Lending Institutions Insurance companies	14 15
9	M	02-Apr	Other Financial Institutions	Securities Firms & Investment Banks Investment Companies Pension Funds	16 17 18
10	M	09-Apr	**Exam 2**		
11	M	16-Apr	Managing Risk	Types of Risk Credit Risk	19 20
12	M	23-Apr	Managing Risk	Liquidity Risk Interest Rate & Insolvency Risk	21 22
13	M	30-Apr	Managing Risk	Derivatives Loan Sales & Securitization	23 24
14	M	07-May	**Exam 3**		
15	M	14-May	*Extra Day*		

Class Policies

Attendance and Participation

This class is not designed to be the type of class where you can frequently miss class, but catch up just before the examinations by reading through the text and written notes provided by instructor. No formal notes will be provided, nor is there a "test bank" of old exams. At this point in your life, your primary emphasis should be on learning the material and developing skills that will help you in the months and years following graduation.

Given the nature of this course, students need to keep up and they can't disappear for long periods of time. Consequently, students are expected to attend each class, and they are expected to participate in class discussions. I will also make mental and written notes about your class participation and attendance.

At the same time, I understand that most of you will be interviewing for jobs, hence will have to miss some classes. Also, people get sick and other things come up that keep you from attending class. For this reason I will not formally take attendance.

Academic Integrity

Individuals who engage in plagiarism, cheating, or "short cuts" do not succeed in business, not least because a reputation for dishonesty now will follow you in your career. Cheating in this course will not be tolerated. Anyone caught cheating in a project or assignment will fail the course and will be reported to the University Judicial System. In addition, all students will be held accountable for the Standards of Academic Integrity as stated in the Undergraduate Bulletin. To avoid plagiarism, care must be taken to ensure that all reference material is appropriately cited. In particular, for project reports, all charts, tables etc. not constructed by the student MUST be referenced. More detailed guidelines for appropriate citation, especially for internet sources, are provided below. Penalties for plagiarism include a score of zero on the project.

Missed Deadlines/Exams

Late assignments will receive a penalty of 10 percent of the project grade for each day delayed. Any student failing to turn in a project will receive a score of zero for the project. Students unable to turn in a project or write an exam due to an emergency must contact me before the due date in order to verify that their excuse and evidence is acceptable.

Disability Statement

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518- 442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

University Policies

Academic: http://www.albany.edu/undergraduate_bulletin/regulations.html
Medical: http://www.albany.edu/health_center/medicalexcuse.shtml

University at Albany/SUNY
School of Business
Syllabus for SPRING 2022 - 3 Credits

Financial Management BFIN 300

SECTION 001-LEC: TUES & THURS/9:00 AM – 10:20 AM
SECTION 002-LEC: TUES & THURS/12:00 PM – 1:20 PM

Instructor Professor Thomas J Monaco

Class Place	Lecture Center 2
Email	tmonaco@albany.edu
Phone	929-387-2981 (only emergencies please)
Office/Office hours	Tuesday & Thursday, 10:30 am – 11:45 am (by appointment)

Course web page

Blackboard	http://blackboard.albany.edu
Connect	http://connect.mheducation.com/class/t-monaco-fa-19-2

Course material

Required material

- *Fundamentals of Corporate Finance,* 11th Edition, by Stephen A. Ross, Randolph W. Westerfield, Bradford Jordan (McGraw-Hill Irwin). Professor will provide copies of chapters, if you do not wish to purchase textbook.
- Connect
- A Financial Calculator is required:
  TI-BAII Plus
- You are responsible for learning how to operate your financial calculator - and it will be beneficial to you to be familiar with your calculator by the time we begin Chapter 5. Students may NOT share calculators on exams. You may NOT use the calculator on your mobile phone.

Course Description

This is an introductory course which covers develops the fundamental concepts of managerial financial decision-making. Time value of money, valuation, risk and return, financial statement analysis, short-run financial management, capital budgeting, cost of capital, long-term financing, and corporate taxation.

Course Objectives

The objective of BFIN 300 is for the student to develop an understanding of the concepts and techniques of financial management in the modern business enterprise. Financial decisions affect virtually all production, marketing, and management strategies. Evaluation of the financial risks, returns, and costs is the necessary framework in which all business policies must be examined. Students are expected to have a basic understanding of the concepts and methods of financial management by the completion of this course. Specific topics of coverage include financial statement analysis, time value of money, risk and return, the valuation of

equity and bonds, capital budgeting analysis. Moreover, the course also serves as a foundation for advanced work in finance.

Prerequisite: ACC211 (this is NOT a co-requisite)

You are responsible for the contents and policies described in the syllabus. Failure to comply with these polices may result in penalties, including lost points for assignments and receiving no points for tests or exams, at the discretion of the instructor.

iClicker:

We will also be using the iClicker (1 or 2) remote keypad. The "clicker" may be purchased at the UAlbany Bookstore for *$57.30* new and *$47.00* used and rented for *$46.40* new and *$37.80* used. Please note that if you have a clicker that you used in a previous semester, you still must register it at www.iclicker.com again for this semester as the iClicker purges all registration information at the end of the semester, If you purchase a USED iClicker, or are given an iClicker from a friend or relative and you register it at iClicker.com you will be prompted that you are attempting to register a previously registered remote and this will require a one-time "used registration fee". *If you register through Blackboard Integrate, you will not have to pay this one-time 'used registration fee'.* Bring your iClicker to every class; it is how you will earn participation and attendance points as well as assignment (performance) points.

iClicker Rules & Guidelines:

Bring your clicker to every lecture and review class. Not doing so means you will not receive credit for any clicker questions asked on days when you are without it.

Your clicker is your personal property and belongs ONLY to you.

Do not share your clicker with anyone else in the class.

It is your responsibility to make sure your clicker works properly. Please pay attention to the low battery indicator light so that you will not run out of batteries during class (fresh batteries at the beginning of the semester should last the entire semester unless the clicker is left on outside of class).

Throughout the semester students often become concerned that their clicker is broken or that their responses are not being recorded properly. The ITS HelpDesk has installed a kiosk in LC-27 that is available to students for testing their remote devices. However, please note that the iClicker kiosk is for troubleshooting purposes only. The HelpDesk cannot act as a repair facility. In addition, ITS and ITLAL have recently added new online student resources for using iClicker. Please take a look at these if you have an opportunity to do so.

Persons caught cheating using the clickers will forfeit a portion or all of their clicker points for the semester and may be subject to academic integrity sanctions.

Grading

Item	Number	Weight per item	Total weight in course
Exams (I & II)	2	40%	80%
Homework	1	5%	5%
*Attendance	30	0.5%	15%

Individual Assignment (Project applying Course Principles);

*Students lose a 1/2 point from their final grade for every class that is NOT attended.

Grading is based on the weighted average of assignment completion and scores earned on the exams, including the last exam, where scores range from 0 through 100.

Grades are assigned on the basis of the weighted-average score for the term according to the following scale:

[93 ≤ P ≤ 100] = A	[79 ≤ P < 83] = B-	[67 ≤ P < 69] = D+
[89 ≤ P < 93] = A-	[77 ≤ P <79] = C+	[60 ≤ P < 67] = D
[87 ≤ P < 89] = B+	[73 ≤ P < 77] = C	[P < 60] = F
[83 ≤ P < 87] = B	[69 ≤ P < 73] = C-	

Class policies

1. *Academic Integrity. The faculty and administration of University at Albany/SUNY support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the SUNY Academic Integrity Policy and the University at Albany procedure for policy implementation can be found on the MyUAlbany portal. If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member must report the violation.*
2. *ADA. In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services. If you have already registered with the Center for Student Disability Services, please provide your professor with the course accommodation form and discuss your specific accommodation with him/her.*
3. *E-mail. Students are required to check their email throughout the course. Students are responsible for all emails sent to your school account pertaining to this class.*
4. *Attendance/Responsibilities. Each student is responsible for keeping up with the class schedule, attending class regularly, checking email, and checking the course Blackboard site. Reference the state law regarding non-attendance because of religious beliefs.*
5. *Incompletes. There are no incompletes for this course, except in the case of extraordinary circumstances (e.g., excessive absences due to severe illness), the student is in good standing, and the instructor determines that an incomplete is most appropriate.*
6. *Failure to complete an exam. If a student misses an exam deadline due to an illness and a written and a verifiable excuse is provided within two weeks of*

the missed exam deadline, the weights assigned to the last exam will be increased accordingly. The physician's note must indicate that the student is too ill to take the scheduled exam at the time of the exam. The written excuse must also provide the physician's phone number and address, and a copy must be included in the instructor's files.

7. *Important Dates:*

January 27, 2022	*Last day to add a course*
January 30, 2022	*Last day to drop a course*
March 12, 2022 – March 18, 2022	*Spring Break*
March 10, 2022	*Midterm Examination*
May 10, 2022	*Final Examination*

Homework is as assigned through Connect and LearnSmart. **Access this through the "Connect" link in the left column of the** Blackboard class site.

Schedule for SPRING 2022
Financial Management
BFIN 300

Section MW5

Week	Class period	Topic	Chapter(s)
1	Tuesday, January 25	Introduction to Finance	1
1	Thursday, January 27	Financials, Taxes & Cash Flow	2
2	Tuesday, February 1	Working with Financial Statements	3
2	Thursday, February 3	Time of Value Money	5
3	Tuesday, February 8	Time of Value Money	5
3	Thursday, February 10	Discounted Cash Flow	6
4	Tuesday, February 15	Discounted Cash Flow	6
4	Thursday, February 17	Bond Valuation	7
5	Tuesday, February 22	Bond Valuation	7
5	Thursday, February 24	Stock Valuation	8
6	Tuesday, March 1	Stock Valuation	8
6	Thursday, March 3	Mid-term Review	
7	Tuesday, March 8	Mid-term Review	
7	Thursday, March 10	EXAM 1 – Mid-term	1-3, 5-8
8	Tuesday, March 22	NPV	9
8	Tuesday, March 24	NPV	9
9	Tuesday, March 29	Investment Decisions	10
9	Thursday, March 31	Investment Decisions	10
7	Thursday, March 10	Project Analysis and Evaluation	11
10	Tuesday, April 5	Project Analysis and Evaluation	11
10	Thursday, April 7	Capital Markets History	12
11	Tuesday, April 12	Capital Markets History	12
11	Thursday, April 14	Return, Risk, and the Securities Market	13
12	Thursday, April 19	Return, Risk, and the Securities Market	13
12	Thursday, April 21	Cost of Capital	14
13	Thursday, April 26	Cost of Capital	14
13	Thursday, April 28	Exam Review	
14	Tuesday, May 3	Exam Review	
15	Tuesday, May 10`	FINAL EXAM	Cumulative

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SCHOOL OF BUSINESS ♦ DEPARTMENT OF FINANCE

Course Syllabus – BFIN/RPAD 435 – Law in Financial Market Regulation – Fall 2021 - 3 Credits

I. Basic Course Information

Catalog Information: Finance/PAD 435 (classes #6942, 7046), Law in Financial Market Regulation

Meeting Place and Times:, Wednesday, 6:00-8:50 p.m.

Web Site: https://blackboard.albany.edu/

Description: This course examines the rationales and main features of regulatory law in financial markets, focusing on banking, securities, futures, options, and other capital markets. It discusses approaches to regulating investor and customer protection, financial institutions, and market structure. It examines relationships among change in financial markets such as financial innovations and regulatory structure and practice. The course discusses the roles of federal and state regulation, self-regulatory organizations and private associations, and firms within the regulatory system. Students will have opportunities to practice writing and presentation skills.

Prerequisite: Recommended: prior course in introductory finance

Required Course Text:

Securities Regulation: Cases and Materials, 9th Ed., by Cox, Hillman, Langevoort, Lipton, and Sjostrom, Wolters Kluwer, 2020

Barron's

The Financial Times

US Securities and Exchange Commission

FINRA

SIFMA

Other readings and cases (made available in various ways), and class handouts.

Strongly Recommended Reading: The Wall Street Journal.

II. Professor Information

Mr. Peter E Bulger, BS,MBA

Office: Massry Center for Business,

Email: pbulger@albany.edu

III. Course Policies

Personal Responsibility Policy:

Each student is responsible for understanding the contents of—and complying with—this syllabus.

Students must be prepared at all times to contribute informed input to the class discussion.

All assignments are due at the beginning of class on the stated dates.

Class attendance is expected. Please arrive on time. Students not in attendance remain fully responsible for information transmitted and activities occurring during that class period.

Note that the syllabus includes many guest speakers.

Ethics and Professional Standards Policy:

The University's policies on academic integrity are fully in effect in this course. All exams, quizzes, case write-ups, assignments, and other deliverables submitted in this course must be entirely your own work. This means no plagiarism of any sort, and no collaboration with anyone else, including others registered for and not registered for the class. In the case of an ethical violation (even the "first one"), expect a grade of "E" for the entire course and referral to the Office of the Vice Provost for Undergraduate Education.

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93-89	88-85	84-82	81-79	78-76	75-73	72-70	69-67	66-63	63-60	60-0

Grade Determination:

Weekly quizzes	50
Paper	10
Team Legal and regulatory developments (2) presentations	24
Attendance/active engagement/participation	16
	100 points

No incompletes (grades of "I") will be given, so all students must remain continuously up to date with work.

Disruptive or unprofessional conduct will result in a substantial grade penalty, the amount of which is at the professor's discretion.

IV. Description of Graded Items

Weekly Proficiency Assessment Quizzes

Beginning on September 1 at the start of each class, students will take a quiz based on the readings assigned for that week.

The purpose is for students to demonstrate comprehension of the readings. The questions posed will not assess deep understanding of the reading content—the classes will cover the readings—but rather evaluate awareness of their basic themes to assure proficiency for conversing on these themes.

The questions will focus on the materials assigned for the week but may also draw peripherally on materials covered earlier in the semester, as well as material from past student presentations. There will be no make-ups for these quizzes. Extra credit assignments may be given based upon instructor's discretion.

Legal and regulatory developments presentations (2 Presentations, each team)

This component of the class will involve teams of 3-5 students each, responsible for briefing each class on recent regulatory developments as drawn from four primary sources: (i) the Securities and Exchange Commission (SEC, sec.org) and The United States Supreme Court (Supremecourt.gov), (ii) the Financial Industry Regulatory Authority (FINRA, finra.org), (iii) New York State Department of Financial Services/North American Securities Administrators Association (NASAA, nasaa.org) and (iv) Financial Press e.g., *Financial Times*, *Barron's*, and bloomberg.com.

Briefing documents must be posted by each team on Blackboard, for all students to see, by 2:00 p.m. on each Wednesday of the team's rotation. Other sources will also be suggested from time to time. The document and presentation will ideally tie to the week's reading. As with written responses to weekly proficiency assessment quizzes, complete sentences and coherent paragraphs are required. Additionally, appropriate headers, pagination, footnotes and annotations are mandatory. It is suggested that each presentation document

be at least six pages in length. Graphics, tables, and PowerPoint are also suggested.

Attendance/active engagement/participation

This includes the extent to which students ask and respond to questions in ways informed by close attention to the readings and class discussion, assessment quiz answers, and an ongoing sharing of cumulative knowledge. This component is separate and apart from the Legal and Regulatory Developments Presentations. Active and effective participation in the course means participation, informed by knowledge of the readings and other materials, in class discussions. It requires more than simply coming to class; however, it does not mean an effort to dominate class discussion.

Each week one member of each team will verbally present a 5 minute summary of the most recent issues affecting financial services. A schedule will be developed once the class commences.

Paper

Individual Course Paper

You will write a five-page paper, responding to the questions or topics that will be disclosed by the third week (Sept 8, 2021). The paper is due by November 13, 2021. The paper should be double-spaced (Minimum 11-point font), with one-inch margins. You can go a bit beyond five pages to avoid cutting an argument short, but definitely do not go beyond six pages. Pages for references do not count against the page limits. You should not use a cover page; your name and the date are the only items required prior to the text.

You should state your arguments clearly and concisely. Writing a paper beyond the page limits will violate the rules for the assignment rather than make the paper more effective. You should submit these papers through the submission process on Blackboard ***in Microsoft Word*** (*do not use other software; I will not accept papers that I cannot open*) by the due date and time.

Typical Class Structure

- Quiz on assigned readings and other materials discussed during the semester.
- Team reports on current issues in major areas such as FINRA, SEC, Court Matters
- Lecture and discussion on weekly reading
- Speakers
- Team Presentations (2)
- Review Quiz and preview next week

V. Class Schedule

Class will be held on the dates listed, with the following topics and reading assignments (subject to change):

Date	Topic	Text Chapter Reading
August 25	Introduction to course and students, team selections	
September 1	**The Framework of Securities Regulation; Definition of a Security and Understanding Investors**	Chs. 1, 2, 3 (pp. 1-104)
September 8	**Public Offerings**	Ch. 4: 105-237
September 15	**Exempt Transactions, Exempt Securities & Secondary Distributions** Speaker: Matthew Reiner- Adirondack Funds	Chs. 5, 239-304 Ch. 8: 417-462 Ch 6 321-374

September 22	**Liability Under the Securities Act** L&R Team Presentations: Presenting teams: 1, 2, 3	Ch. 9: 463-521
September 29	**Exchange Act and the SEC** Speaker: Mark Bulger and Chris Yamaguchi: DriveWealth LLC – Anti Money Laundering regulation. Digital Markets	TBA
October 6	**Financial Innovation, Trading Mkts, Derivatives, SecuritizationFinancial Reporting: Mechanisms, Duties, and Culture** Speaker: Peter Dorsman, Corporate Governance	Chs. 10, 11: 523-589
October 13	**Regulation of Securities Markets and Broker-Dealers** L&R Team Presentations: Presenting Teams 4,5,6	Ch 18
October 20	**Fraud in Connection with the Purchase or Sale of a Security** Speaker: Gerald Citera: The Securities and Exchange Commission, Market Structure	Ch. 13: 669-751
October 27	**The Regulation of Insider Trading** L&R Team Presentation #2: 1,2,3	Ch. 14: 753-865
November 3	**The Enforcement of the Securities Law** Speakers: Daniel Nolan and Sean Leonard: Graypoint Advisers_ Institutional and wealth management	Ch. 15: 867-913
November 10	**Shareholder,** **Voting Corporate** **Takeovers** L&R Team Presentations #2: Presenting teams: 4, 5, 6	Chs. 16, 17: 915-969
November 17	**Regulation of Investment Advisers and Investment Companies** **Speaker: Peter Calabria: Accounting and Finance** Individual Paper due	Ch 19: 971-1052

December 1 **Zoom Session, if needed**

Important reminder about career resources: Whether you are planning for an internship, full-time employment, or graduate school, take advantage of state-of-the-art resources of the School of Business John S. Levato Office of Career Services. Go online and access them using your UAlbany email address: (1) Vault Career Intelligence system; (2) VMock resume critique system, and (3) Big Interview practice system. More details are here.

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Learning Objectives for BFin 435: Law in Financial Markets

Discuss the main functions of the financial system
Discuss the purposes of and main risks borne by types of financial intermediaries
Describe the various types and purposes of financial markets as well as market-facilitating institutions
Discuss the SEC's structure, purposes, and jurisdiction
Describe financial intermediaries as transformative agents

Describe how a security is defined, based on the Howey (1946) test.

Describe the purposes and effects of major US financial legislation:

- Federal Reserve Act of 1913
- McFadden Act of 1927 (prohibited interstate banking)
- Banking Act of 1933 (including Glass-Steagall)
- Gramm-Leach-Bliley Act of 1999 (repealed Glass-Steagall)
- Securities Act of 1933
- Securities Exchange Act of 1934
- Investment Advisors Act of 1940
- Investment Company Act of 1940
- Sarbanes-Oxley Act of 2002
- Dodd-Frank Act of 2010

Describe the causes of and regulatory responses to the 2008 Global Financial Crisis
Describe the structure and purpose of the Consumer Financial Protection Bureau (CFPB) and Financial Stability Oversight Council (FSOC)

Describe forms and implications of market efficiency

Explain various forms of market failure and how they arise

Discuss the purpose, risks, and regulation of banks, insurance companies, payment and settlement systems, and various shadow banking organizations.

Describe regulations for banks related to entry requirements, governance rules, prudential requirements, and resolution procedures.

Describe the concepts of global contagion and systemic risk

Explain the role of central banks in macroprudential regulation involving commercial banks.

Describe bank capital and liquidity rules, including under Basel III

List and describe the roles and regulation of information intermediaries

Explain the concepts of information asymmetry, externalities, common goods, conflicts of interest, agency costs, short selling, credit intermediation, maturity transformation, liquidity transformation, securitization, and prop trading

Describe mandatory and voluntary financial market disclosure rules

Discuss market manipulation and insider trading rules

Describe and justify the main elements of consumer finance regulation

Describe and justify regulations that apply to financial advisors

Describe various financial products and how they are regulated

Explain shadow banking and the regulatory response to growth in this sector

Describe how various collective investment funds work

Explain regulatory arbitrage

Describe the various models of regulatory jurisdiction
Discuss the regulatory trends related to firm compliance vs. macroprudential stability, and the evolution of macroprudential tools
Describe various goals, forms, and strategies of regulatory design
Describe forms that regulatory supervision and enforcement take, and how the two interrelate