

COURSE ADDITIONS

APA2150.01 APA Workshop: Focus: Cities*Ken Himmelman*

In 2008, for the first time in human history, more people inhabited cities than the countryside. Cities have always played a fundamental role in the economic and cultural development of human society. Many of society's greatest challenges are intensified by the density of urban populations: slums, crime, poor educational and health outcomes, environmental hazards, and more. Yet increasingly, cities are being viewed as potential laboratories for solving many of these same challenges. This is as true in the developed world as it is in the developing world. The focus of this workshop will be to look at cities through the lens of public action. How can we understand more about the role cities play in contemporary human society? How can we take advantage of what cities have to offer in terms of large-scale public problem solving?

As a CAPA workshop, this course will be one of shared discovery. It is not a course on urban planning or a history of cities, though we will likely learn about both. The method of the course will be to read together and to investigate what cities have to offer us in terms of public action. We will have a shared reading list to get us started, but the curriculum will adapt as we work together to understand better the subject we are exploring. Work will include frequent reading responses, in class presentations, and a final independent project of your design that looks at how cities and urban populations can play a role with regard to a particular social problem of interest to you in the context of your Plan.

Prerequisites: None.
Credits: 4
Time: MTh 4:10 - 6pm

APA2207.01 Media and Democracy*Erika Mijlin*

In the midst of the heat and noise of an election season, we will pursue an inquiry into the deeply entangled role of media in a democratic society. Topics may include: historical precedence for media influence before and beyond American democracy, new web-based strategies for the electoral process, the implications of corporate media ownership, the role and responsibilities of a free press, the nature of decentralized social media in the democratic process, tele-visuality, media strategy, public opinion, etc. We will attempt to circumvent the typical extremes of cynicism and/or idealism that often accompany discussions of media and democracy, and instead strive to describe and understand the contemporary realities clearly. Students will be expected to conduct research projects and remain engaged in current media/democracy news stories.

Prerequisites: None.
Credits: 4
Time: TF 10:10 - 12 noon

APA4106.01

How Do You Know: The Culture of Information

Erika Mijlin

On a daily basis, we each define a relationship to information, as a bearer of truth, evidence, authority, timeliness, social leverage, insight, etc. Part seminar and part workshop, this course will attempt to make that complex relationship visible. We will focus on the idea of Information as an object of cultural study: What is Information, what is its technical and cultural history, from its usage in early computing to the ubiquitous computing of modern existence? What are the qualities, in theory and in practice, of information, data, and knowledge, and how do we use these to organize society? What does it mean to have information, to have access to it, and further, to be informed? Through readings and individual/group projects we will explore these questions, and the cultural role of being an information-seeker across disciplines, experimenting with various ways of framing questions, collecting information, and presenting research.

Prerequisites: Permission of the instructor.

Credits: 4

Time: W 2:10 - 6pm

APA4202.01 **APA Workshop: Focus: Human Rights: Women and Girls**

Elizabeth Coleman; Susie Ibarra

As long as discrimination and inequities remain so commonplace everywhere in the world, as long as girls and women are valued less, fed less, fed last, overworked, underpaid, not schooled, subjected to violence in and outside their homes—the potential of the human family to create a peaceful, prosperous world will not be realized.

Hillary Clinton

The extension of human rights to women and girls has an unparalleled and demonstrable capacity to transform possibilities—from education, economic equity, and health to governance, the environment, and uses of force. Nonetheless, despite its huge and pragmatic benefits for the entirety of the human community, its evident ethical value, and the vast array of resources that have been directed at achieving the goal of extending full human rights to women and girls, progress in this area is painstaking at best. To address this issue adequately will demand the very best strategic thinking, a breadth of human capacities from rhetoric to design, empathy to quantitative reasoning. The range, complexity and depth of the force field it engages invites the participation of the full gamut of the arts and sciences and a range of perspectives from outside the academy including business, journalism, law, medicine and politics.

The workshop will proceed by first: analyzing and evaluating the current efforts to address the persistence and varieties of inequity; second, on the basis of this analysis selecting the challenge/s to focus on that will enable us to use our resources in optimally effective ways; and finally addressing the challenge carved out by the workshop and laying the groundwork for next steps.

Students are invited to participate in this workshop provided they have an interest in working in the arena of public action whatever the particular area of interest. The choice of focus for this workshop—the full extension of human rights to women and girls—is precisely its capacity to benefit from and integrate a vast range of orientations.

In addition to those enrolled in the workshop, we will engage the resources of Bennington faculty, staff and students and guests from outside the College and guests from outside the College to assist in realizing its goals.

Reading: Nicholas Kristoff and Shery WuDunn, *Half the Sky* which provides an overview of the current situation and the multiple efforts to address it. Subsequent readings will emerge as the workshop proceeds.

Prerequisites: Permission of the instructors.

Credits: 4

Time: T 8:20 - 12 noon

ARC4211.01 **Architecture Seminar**

Donald Sherefskin

This seminar will read a range of foundational texts underpinning architectural theory. Active participation in class discussions is required. Brief, but well crafted responses will be submitted each week, as well as a final research paper.

Prerequisites: Permission of the instructor.

Credits: 2

Time: Th 4:10 - 6pm

BIO2125.01 Bacteria, Disease, and Immunity*To be assigned*

This entry-level course will introduce students to pathogenic bacteria, their role in human diseases, and the immune response they elicit when they invade human tissue. Various mechanisms of infection will be discussed. Additionally, specific emphasis is placed on bacterial structure, how bacterial cells are different from human cells, and how this allows us to selectively target bacteria with therapeutics, namely antibiotics. Because the human immune system is engaged immediately upon internalization of a microbe, the immune response is also discussed. Upon conclusion of the course, students should have a solid understanding of the dynamic interplay between the bacterial cells causing an infection, the resulting immune response in the human body, and the effects of antibiotics on both bacterial and human cells.

Prerequisites: None.
Credits: 4
Time: TF 10:10 - 12 noon

BIO4130.01 Molecular Mechanisms of Cancer*To be assigned*

The normal mechanisms governing cell physiology and replication are tightly regulated at the molecular level. Collectively referred to as “the cell cycle”, these molecular signals, if altered to become either hyperactive or hypoactive, have a profound impact on the cell’s ability to control replication. Although loss of cell cycle control is a commonality that exists among all cancers, the molecular origins of these perturbations can be quite heterogeneous from one cancer type to another. This upper-level course will focus on the physiology of a cancer cell, with particular emphasis on the various mechanisms by which signal transduction pathways become constitutively active in a cancer cell. Additionally, student presentations will guide in-depth discussion of the primary literature ranging from the pioneering experiments of Bishop and Varmus *et al.* that elucidated a viral origin to cancer, to current research in cancer therapeutics.

Prerequisites: *BIO2111 Introduction to Cell Biology* or permission of the instructor.
Credits: 4
Time: T 2:10 - 6pm

CS2150.01 Computing Ecology*Andrew Cencini*

Google, Twitter, Facebook, and the iPhone have fundamentally transformed the way we live, learn, create and work. But are they also transforming our environment? Data centers have been referred to as the factories of the information age – who's paying attention to what's coming out of the smokestacks? What is the environmental cost of bloated software? Is the accelerated pace of technological planned obsolescence (also known as Moore's Law) a critical risk to clean water and air? This course provides an introduction to the environmental impact of computing – in particular, examining data center and personal computing power consumption, as well as physical waste generated by computing. We will conduct physical and virtual experiments to measure and analyze power consumption and efficiency relative to computing (hardware and software), and will learn essential programming and analysis skills applicable to a broad array of questions and problems. In addition, we will survey current academic and industrial research and initiatives relative to green computing, and consider ways to reduce the environmental impact of computing on a personal, local and global level. Students with all levels of technical and programming experience are welcome.

Prerequisites: None.
Credits: 4
Time: MTh 10:10 - 12 noon

CS4130.01 Big Data*Andrew Cencini*

No question should go unanswered on account of the size, complexity, or difficulty in gathering and analyzing data. In this class, we will explore three areas in computing – programming, databases, and distributed computing. The first area, programming, will help students to identify problems that can be solved by means of computer programs, and show us how ideas can be transferred into algorithms and, ultimately, code. The second area is databases. Here, students will be exposed to what a database is and does, the various types and styles of databases, and ways in which data may be organized, imported, manipulated, analyzed, exported and shared. Finally, we will be introduced to Hadoop – a distributed processing framework used to work with massively large data sets. Students will design, refine, and implement a project that uses the theory, skills and tools from one or more of these areas to ask and answer a data-driven question of their own.

Prerequisites: Permission of the instructor.
Credits: 4
Time: MTh 2:10 - 4pm

EDU5504.01 **MAT Student Teaching Practicum**
CCT Faculty

The yearlong student teaching experience lies at the heart of teacher candidates' learning. The experience, along with intensive supervision, gives the student teachers the opportunity to integrate the demands of the MAT program, the local school, and State Standards in a supportive environment. The ultimate goal is for student teachers to develop their individual styles from a common conceptual base. Placements are made in local schools with program approval.

Prerequisites: Open only to student teachers enrolled in the Master of Arts in Teaching program and pursuing licensure.
Credits: 8
Time: TBA

HIS2150.01 **Medieval Europe: The Growth of Christianity**
To be assigned

In this class, students will be introduced to the European Middle Ages through an investigation of its most defining religious tradition. Using a variety of primary sources, we will come to understand the lives, thoughts, feelings, and aspirations of medieval people as they used Christian stories and Christian doctrines to approach the Big Questions of human existence. We tackle such issues as the development of doctrine, the exploration of spirituality, the drive for crusade, the call for reform, the growth of mysticism, and encounters with Christianity's Others (pagan traditions, Judaism, Islam).

Prerequisites: None.
Credits: 4
Time: TF 10:10 - 12 noon

HIS4108.01 **Sound Studies**
To be assigned

How do we hear? Why do we listen? From religious chant to village bells to elevator muzak to noise pollution, sound has played a major role in human cultures and human experience since time immemorial. In this course, students will approach and engage critically with sound, listening, hearing, and aurality as categories for the analysis of societies from prehistory to the present day. Readings will be drawn from history, anthropology, philosophy, literature, art, music, environmental studies, and science studies. In addition to weekly readings, students will be asked to write papers, partake in listening/sound exercises, and construct creative projects that engage with the themes of the class.

Prerequisites: One course in social science or music.
Credits: 4
Time: TF 2:10 - 4pm

MAT2111.01 Introduction to Applied Mathematics*To be assigned*

The emphasis of this course is on mathematical modeling, and the tools necessary for it. Systems students will model include population growth, predator-prey systems, planetary motion, reaction and diffusion, heat and fluid flow, and evolutionary trees. The necessary mathematical tools to be introduced are difference equations, exponential and logarithmic functions, trigonometric functions, dimensional analysis, estimation of orders of magnitude, interpretation of graphs, and elementary probability. This course is not a repetition of high school mathematics; rather, it places high school mathematics in a larger context, and concentrates on the applications of mathematical thinking to the sciences. You do not need to know about logarithms or trig functions to take the course - we will develop these from the beginning - but you should be comfortable with topics like elementary algebra and drawing simple graphs.

Prerequisites: None.
Credits: 4
Time: MTh 4:10 - 6pm

MAT4123.01 Orbital Dynamics*To be assigned*

This course will introduce many of the concepts needed to describe orbits of bodies moving in a gravitational field. After an introduction to Newtonian mechanics, the two-body problem will be covered in detail including the classical theory of Kepler orbits, the orbital elements, and orbital transfers. We will then cover important aspects of the three-body problem which is used to model trajectories of small satellites moving in the Earth-Moon and Sun-Earth/Moon systems. This particular problem was made famous for its study by Poincaré whose seminal results provided the foundation for the modern theory of dynamical systems and chaos. We will find that this topic provides a natural introduction to the rich dynamical structure underlying nonlinear systems including fixed points, periodic orbits, stability, and chaotic orbits. Knowledge of differential equations, introductory physics, and linear algebra will be helpful but are not required as necessary concepts from these areas will be provided in class. A good understanding of differential and integral calculus is the only definite prerequisite.

Prerequisites: *MAT4145 Calculus: Analysis of the Infinite* or equivalent.
Credits: 4
Time: TF 10:10 - 12 noon

MHI2105.01 Music Compositions for Dance

Michael Wimberly

This course surveys compositions created by 20th century composers, including the likes of Debussy, Ravel, Prokofiev, Stravinsky, Bartok, Barber, Schuman, Villa-Lobos and others. These composers created landmark compositions for choreographers and dance companies such as, Ballet Russe, Martha Graham, Katherine Dunham, Alvin Ailey, Joffrey Ballet, George Balanchine, Twyla Tharp, Urban Bush Women and Peter Martins to name a few. We will examine their history, relationships, musical style, form and analysis, thematic and compositional devices that made them unique. Each student will be assigned a composer and choreographer to present to the class. There will be weekly research, listening and viewing assignments along with selected readings. Students will be expected to keep a journal of notes on classes and homework.

Prerequisites: None.
Credits: 2
Time: T 4:10 - 6pm

MIN2120.01 Drumming: An Extension of Language

Michael Wimberly

This course serves as an introduction to learning rhythms, chants and songs from Africa, Brazil, Cuba, Haiti, and the African Diaspora. Using percussion instruments such as, congas, timbales, surdos, pandeiro, repinique, djembe, dunumba and chekere, students will learn basic hand and stick drumming technique, recognize drumming cues, calls and patterns associated with traditional rhythms from these countries. Rhythms such as, Mandiani, Kakilambey, Samba, Batucada, Yanvalu, Banda, Rhumba, and Guaguanco will be explored. Additionally, we will examine these cultures through studying and discussing their language, dance, politics, mystic and religious beliefs of the people associated with these rhythms.

Prerequisites: None.
Credits: 4
Time: W 10:10 - 12 noon, W 2:10 - 4pm

MPF4110.01 Bennington World Percussion Ensemble

Susie Ibarra

This class is a new ensemble for Bennington percussion students to learn, play and perform percussion music that utilizes and focuses on oral traditions and improvisation. Instruments will include hand percussion, drumset, gongs, bamboo, mallet instruments and keyboards. The ensemble will learn and play arrangements of traditional and contemporary compositions for percussion coming from World, Indigenous, Jazz and New Music backgrounds.

Note: The group will be invited to perform on the World Drum Project led by Ibarra for Earth Day 2013 at Rensselaer Polytechnic Institute. World Drum Project is a participatory site specific performance involving ensembles from 12 colleges and schools celebrating creativity and the environment.

Prerequisites: Permission of the instructor. Students must have previous instrumental training and experience. For an audition, contact Susie Ibarra (sibarra@bennington.edu).
Credits: 4
Time: M 2:10 - 6pm

MUS4108.01 Sound Studies*To be assigned*

How do we hear? Why do we listen? From religious chant to village bells to elevator muzak to noise pollution, sound has played a major role in human cultures and human experience since time immemorial. In this course, students will approach and engage critically with sound, listening, hearing, and aurality as categories for the analysis of societies from prehistory to the present day. Readings will be drawn from history, anthropology, philosophy, literature, art, music, environmental studies, and science studies. In addition to weekly readings, students will be asked to write papers, partake in listening/sound exercises, and confect creative projects that engage with the themes of the class.

Prerequisites: One course in social science or music.**Credits:** 4**Time:** TF 2:10 - 4pm**PRI2120.01 Introduction to Relief Printing: The Woodcut***Jesse Connor*

This is an introductory course in relief printmaking. Students will learn the basics of the traditional woodcut within the context of contemporary art making. Through demonstrations, hands on experience and critiques students will learn cutting techniques, about inks, paper and the use of etching presses to print images. Along with learning the technical aspects of relief printmaking, students will be expected to develop a series of black and white images that relate to one another thematically. Wood cut is a direct, simple and unique medium that is accessible to artists of all skill levels.

Prerequisites: None.**Credits:** 4**Time:** Th 2:10 - 6pm**PRI4115.01 Printmaking Assemblage***Jesse Connor*

This course is about expanding the possibility of the print. Students will bring to class various levels of printmaking experience, and be challenged to look beyond a traditional approach to printmaking. Demonstrations will be given in intaglio, monotype, and woodcut. The prints created will be viewed as an effective means of generating pattern, texture, density and rhythm in an image. Projects will be designed to encourage an exploration of the multimedia, assemblage process. We will combine elements of print, drawing and painting to produce unique works. This class will emphasize the value of the unexpected, whether it refers to the size, shape, or unique combination of materials in the finished piece. Each student will not only demonstrate their ability to create a printed image, but their willingness to improvise, and revise in response to an ongoing, in class dialogue about their work. Intermediate to advanced students will find this class appropriately challenging and supportive.

Prerequisites: Previous print course at the college and permission of the print faculty.**Credits:** 4**Time:** F 2:10 - 6pm

TIME CHANGES

ARC/AH/ENV2112 Nature and Artifice

Change from MTh 2:10 - 4pm

New time: Th 2:10 - 4pm

DRA4305.01 Performance Production: The School for Lies

Change from MTWThF 6:30 - 10:30pm, Sa 1 - 6pm

New time: MWThF 7 - 10pm, Sa 1 - 6pm

MIN4335.01 Jazz Piano Lab

Change from Th 10:10 - 12 noon

New time: TBA

PREREQUISITE CHANGES

ENV4107.01 The Agrarian Myth*Valerie Imbruce*

The "family farm" as a unit worthy of protection and replication is a construct deeply embedded in American culture. Thomas Jefferson was a devout defender of agrarianism. He believed that democracy, personal freedom and virtue are dependent on a society in which people own and work the land in order to sustain the family unit. The yeoman tradition, however, was never a reality in the United States. Since early colonial times farmers were engaged in commercial agriculture, and there were various forms of land tenure from near feudal relations to sharecropping. Curiously, however, agrarianism still holds a strong place in present day culture. Historians have coined this contradiction "the agrarian myth." Agrarianism is now coupled with environmentalism; the small, family farmer is argued to be a better land steward, and the family farm unit has become a pivotal point of opposition to large, industrial farms. What evidence exists to support this argument? What is "good land stewardship"? How does land tenure, market structure, and regulation affect agricultural practice? In this class we will examine the agrarian ideals of past Americans like Jefferson and the Grangers to the current philosophies of the influential writer Wendell Berry. We will compare these ideals to records of practice by reading historical accounts of agriculture in New York State, ethnographies of organic, conventional, and small-scale family farming, and farmers' memoirs. The class will be reading and writing intensive, and will include a field trip.

Prerequisites: One course in environmental studies and one in social science, or permission of the instructor.

Credits: 4

Time: TF 2:10 - 4pm

COURSE DESCRIPTION CHANGES

PHY4235.01 **Physics I**
PHY4235L.01 **Physics I: Lab**
Hugh Crowl

Physics is the study of what Newton called "the System of the World." To know the System of the World is to know what forces are out there and how those forces operate on things. These forces explain the dynamics of the world around us: from the path of a falling apple to the motion of a car down the highway to the flight of a rocket from the Earth. Careful analysis of the forces that govern these motions reveal countless insights about the world around you and enable you to look at that world with new eyes.

Prerequisites: One college-level math course, a solid high school physics background, or permission of the instructor.
Corequisites: Students must also register for the lab, *PHY4235L.01*.
Credits: 4
Time: TF 10:10 - 12 noon
Time: W 2:10 - 6pm (lab)

COURSE CANCELATIONS

APA4201.01 **Workshop on Advancing Public Action**
Elizabeth Coleman

FV2205.01 **Costume Rendering**
Charles Schoonmaker
Please note that this course is still offered under Dance and Drama