

Fall 2016 Course Offerings

College of Creative Studies
Fall 2016
Course Offerings

ART CS 15, Section 1

EC#01271

Art Colloquium

Art Colloquium is designed to assist you in making the most of your experience as a CCS art student. It is required for all CCS Art Majors who are entering UCSB as freshmen or transferring into CCS in the fall quarter. This course is also open to students in the Department of Art who are thinking about applying to the CCS Art Program

This course will:

- acquaint you with CCS privileges, expectations, course offerings and procedures
- familiarize you with UCSB campus offerings and opportunities available to you as art students
- introduce you to potential research tracks
- support your developing studio practice
- build community and dialogue between the CCS art students and Department of Art

We will meet weekly as a group on Thursday

You must also attend Intro to Contemporary Art

Additional requirements outside of class will be listed in the course syllabus.

Enroll in the Art Colloquium (ART CS 15) for 3.0 units with no Letter Grade.

Enroll in Intro to Contemporary Art (ART ST 1C) for 2.0 units with Letter Grade.

Instructor: Linda Ekstrom
Time: Thursday 2:30pm- 4:20pm
Place: BLDG. 494, Room 136

Art CS 102, Section 1

EC#01370

Materials and Practices of Painting

This class is a thorough treatment of what every painter should know about materials and craft. Topics include: the history of materials and techniques and their relationship to the formal aspects (and thereby the meanings) of paintings "traditional" versus new materials studio practices and methods health and safety issues.

There will be a presentation by the instructor each week in class. Attendance is compulsory. There will also be a written examination at the end of the quarter, successful completion of which will account for two of the 4 units offered for this class.

A course materials fee will be assessed to your BARC account.

Instructor: Dan Connally
Time: Tuesday and Thursday 11:30am- 2:20am
Place: BLDG. 494, Room 136

Art CS 105, Section 1

EC#01453

Artists' Books: Beginning and Intermediate

This course will explore the book as art -- a structure and space for the containment and interplay of form, text and visual elements. Both technique and content will be addressed to find appropriate pairings between the book structure and that which the structure contains. We will create a variety of bindings within the tradition of artists' books, covering a broad range of options for your future book projects. While the course will explore artists' books as a genre having a particular history, context, and tradition of its own, we will also see examples of how the book operates as a symbolic form, as sculpture extended into space & as a component within an artist's larger body of work.

At an appropriate time during the quarter the focus will shift to each student's individual research and course project they plan to develop over the second half of the quarter.

Advanced students may take this course on an independent track and develop their work outside of the course syllabus.

Enrollment is limited to 12.

Intermediate and advanced students may take this course on an independent track and develop their work outside of the course syllabus.

In addition to the weekly class meeting the course will also have a required lab on Thursday evenings from 6:30-8:20.

A course materials fee will be assessed to your BARC account.

Required Textbooks:

Golden, A. *Making Handmade Books, 100+ Bindings, Structures and Forms* Lark Crafts
ISBN-10: 1600595871 or ISBN-13: 978-1600595875

Instructor: Linda Ekstrom
Time: Wednesday 1:00pm- 4:20pm
Thursday 6:30pm-8:20pm
Place: BLDG. 494, Room 107

Art CS 112, Section 1

EC#01537

Independent Projects

Intensive exploration of individual projects in the visual arts with the help of the instructor. There will be group discussions, assigned reading, and one-on-one meetings with Dan. You'll need to submit a written description of the work you plan to undertake at the first class meeting. Toward the end of the quarter, each class member will present his or her work to the class for critical response. You must devote at least twelve hours of work outside class each week to earn four units.

Enrollment by consent of the instructor.

Instructor: Dan Connally
Time: Tuesday 4:00pm- 5:20pm
Place: BLDG. 494, Room 136

ART CS 112, Section 2

EC#01545

Professional Practices for Artists

This course will focus intensively on the preparations necessary for emerging artists entering the world of professional artistic practice. Our weekly classes will be built around readings, discussions, and the sharing of written work. Writing will be a necessary component. In a contemporary art world increasingly dependent upon conceptually-driven and text-based works of art, how does writing clarify, obscure, or become a work of art itself? What is the role of the curator in mediating this kind of writing? What is the role of the artist and the critic? Have these roles increasingly merged? This writing-intensive course explores the nuances of the contemporary art world. Some of the issues we will cover include: alternative spaces and their histories and role in emerging artists, careers, contemporary art criticism, digital networking for artists, residency and grant programs for emerging artists, artists as curators and administrators, and the basics of art-as-entrepreneurship.

Prerequisites:

Upper level art majors, honors art majors, and art cs majors

Instructor: Jenni Sorkin
Time: Monday 5:30pm- 8:20pm
Place: BLDG. 494, Room 136

Biology CS 10, Section 1

EC#02915

Biology Colloquium

THIS COURSE IS DESIGNED FOR AND REQUIRED OF NEW CREATIVE STUDIES BIOLOGY MAJORS (both incoming students to UCSB and transfer students from the College of Letters and Science).

It will provide a roadmap to enter the world of research and point the way to becoming a junior colleague rather than an undergraduate student. We will discuss styles of research, creativity, philosophy of science, and faculty-student relationships. We'll also introduce you to the tools necessary to read research papers, to seek preexisting information in the library and on the web, to generate and develop your own ideas and papers. In the latter part of the course we will use this information to determine how to gain access to a research laboratory at UCSB and how to move most rapidly towards intellectual parity with the sponsoring professors, graduate students, and postdocs in the laboratory.

Normative number of units earned is 2.

Prerequisites: CCS Biology major

Instructor: Claudia Tyler and John Latto
Time: Wednesday 3:00pm- 4:50pm
Place: BLDG. 494, Room 143

Biology CS 12, Section 1

EC#02931

Introductory Biology

Biology CCS 12 is an augmentation to the MCDB 1A class, designed specifically for CCS biology students enrolled in that class. The course content will focus on introductory biochemistry, molecular cell biology, development and genetics, but it will also include content on understanding how the University works and successfully navigating one's first year at UCSB. The course will emphasize research, critical analysis and contemporary relevance, integrating MCDB 1A course material with the primary Writing and Literature. The course will meet once per week for one hour.

Instructor: **Stu Feinstein**
Time: **Thursday 8:00am-8:50am**
Place: **BLDG. 494, Room 143**

Bio CS 101, Section 1

EC#03012

Physiology of Stress

The portion of the vertebrate nervous system that controls the “stress response” –the sympathetic NS - serves a critical function, aiding in survival and enabling great feats to be accomplished: the ability to suddenly outrun a fast and hungry predator, or fight off a threatening competitor even if out-sized or out-numbered. Generally, this response is activated in emergency situations that require an animal to “fight” or take “flight”.

Humans often activate the stress response even when no external threat or challenge is present – we can sit in a chair and just thinking about something irritating or stressful can stimulate our sympathetic nervous systems to produce adrenaline, increase heart rate, and activate other related reactions. When we do that over extended periods there are impacts on many aspects of our physiology that can affect overall health. In this class we will learn about the “fight or flight” response, and how it affects the body when engaged short and long-term. We will read the informative and entertaining book, “Why Zebras Don’t Get Ulcers”, as well as recent published studies on human stress. We will also have guest speakers, who will discuss some healthful techniques for managing stress in our daily lives.

Normative number of units awarded for the class is 2, with the option of an additional unit awarded for a research project in area of student’s interest

Required Textbooks:

Sapolsky, R.M. *Why Zebras Don’t Get Ulcers: The Acclaimed Guide to Stress, Stress-Related Diseases, and Coping* Holt 3rd ed
ISBN: 978-0-8050-7369-0, ISBN10: 0-8050-7369-8

Instructor: Claudia Tyler
Time: Tuesday 9:00am- 10:50am
Place: BLDG. 494, Room 143

Computing CS 1A, Section 1

EC#09225

Computer Programming and Organization 1

****This course is open ONLY to 1st year entering CCS Computing Majors. All others are by permission of the instructor only.****

This course is the first half of a two quarter sequence (CMPTGCS 1A CMPTGCS 1B) designed to prepare students to take upper division courses in Computing, and participate in undergraduate research projects in Computing under the direction of CCS and College of Engineering Computing faculty.

In both quarters, the course is paired with CMPTGCS 1L, "Programming Lab", where students undertake individual and group programming projects to build and reinforce their skills and knowledge.

1A provides students with the opportunity to build skills and knowledge in the following areas: problem solving and algorithm development, C and C++ programming, software development tools, programming language paradigms (structured, functional and object-oriented programming), basic UNIX utilities and tools, basic data structures including arrays and linked lists representations of lists, stacks, queues, and binary trees, binary and linear search, sorting techniques, iteration vs. recursion, basic running time analysis, data representation.

In addition to basic skills in C and C++ (which is a fundamental preparation for upper division CS courses at UCSB), other programming languages such as Java, Scheme, Python, JavaScript and others may be explored either because of the principles they illustrate, or based on student interest.

Prerequisites:

ALL spots are RESERVED for incoming 1st year CCS Computing majors, students that have been admitted as double majors in CCS Computing plus another major.

Required Textbooks:

Savitch, W.
ISBN: 9780133591743

Problem Solving with C++, 9th Edition

Pearson

Fall 2016 Course Offerings

Main, M. and Savich, W. *Data Structures and Other Objects Using C++, 4th Edition* Pearson
ISBN: 9780132129480

Instructor: **Phill Conrad**
Time: **Tuesday and Thursday 11:00am-12:20pm**
Place: **BLDG. 494, Room 143**

Computing CS 1L , Section 1

EC#09241

Programming Lab

This course is required for all freshmen (first-year) and lower division CCS Computing majors.

Students taking this course will have an opportunity to build a piece of software of their own design, guided by the instructor, and supported by the community of fellow students.

It is a hands-on project and assignment-based course where students will gain strong practical and technical skills in various programming languages including C, C++, and Java, UNIX/Linux: shell, tools, utilities and programming environments, user interfaces, and software engineering principles.

The course is open to all CCS students who need additional training and practical insight that is needed to take upper division Computing Courses.

This is a 4 units credit course. Units awarded will be based upon attendance, general homework assignments, and individual projects. Instruction and hands on lab work will be 100% in the classroom, where students are expected to work on their own laptop computers. If the student does not own a computer he/she should check with the instructor for alternative arrangements.

This course roughly corresponds to CMPSC48 in the College of Engineering Computing curriculum.

Instructor: **Murat Karaorman**
Time: **Monday and Wednesday 6:00pm-8:20pm**
Place: **BLDG. 494, Room 143**

Computing CS 2, Section 1

EC#09266

Foundations of Computer Science

Mathematical foundations of computer science, including logic, sets, functions, introduction to algorithms and their analysis, methods of proof, induction, basics of counting, modular arithmetic, discrete probability, recurrences, divide-and-conquer, generating functions, trees and graphs, graph algorithms.

Instructor: Omer Egecioglu
Time: Monday and Wednesday 12:30pm- 1:50pm
Place: BLDG. 494, Room 143

Math CS 101A, Section 1

EC#31187

Problem Solving Seminar I

Various topics in number theory including modular arithmetic, and irrational numbers.

Instructor: Karel Casteels
Time: Tuesday and Thursday 3:00pm- 4:20pm
Place: BLDG. 494, Room 164b

Math CS 120, Section 1

EC#31237

Topics in Discrete Math I

The goal of this course is to explore some common problem solving techniques and their applications. The class will have a non-standard structure in the sense that class work, collaboration and student presentations will be the norm.

Instructor: Karel Casteels
Time: Monday, Wednesday and Friday 3:00pm- 4:20pm
Place: BLDG 494 Room 164b

Math CS 128, Section 1

EC#31260

Introduction to Higher Mathematics

This class is a formal introduction to the language and culture of mathematics. Unlike previous classes you may have had, the goal of this class is not to cover any specific subject; rather, its aim is to teach its students how to rigorously think and talk about mathematics. Specific topics may include some of the following: Set Theory and Proofs, Number Systems, Relations, Equivalence Relations, Functions, Polynomial equations, Cardinality, Modular Arithmetic and Group Theory...

Instructor: Maribel Bueno Cachedina

Time: Monday, Wednesday, Thursday, Friday 11:00am- 12:50pm

Place: BLDG. 494, Room 164b

Math 130A, Section 1

EC#58040

MULTIDIMENSIONAL ANALYSIS I

The topics of this class will include Topology of \mathbb{R}^n , Limits and Continuity, Directional derivatives and the Differential, Chain rule, Classification of critical points, Maxima and Minima, Taylor's formula in several variables, Classification of critical points, Multivariable Mean Value Theorem, Inverse and Implicit Mapping Theorems.

Required Textbooks:

Edwards, C.H.
ISBN-10: 0122325508

Advanced Calculus of Several Variables

Dover

Instructor: Xu Yang
Time: Tuesday and Thursday 3:00pm-4:20pm
Place: BLDG. 494, Room 164b

Music Composition CS 101, Section 1

EC#36541

Individual Instruction in Music Composition

One on one instruction in music composition, with an emphasis on music in the notated tradition. Students should come by Old Little Theater 154B to sign up for a weekly lesson time prior to the first day of classes.

Priority given to CCS Music Composition majors. All others require the permission of instructor, prior to enrolling.

Instructor: Leslie Hogan
Time: TBA
Place: BLDG. 494, Room 154

Music Composition CS 101, Section 2

EC#36558

CCS COMPOSITION TUTORIAL

Private tutorial instruction in Composition, centered around the original work majors complete towards exit portfolios, recitals and juries. Principally for CCS Music Composition majors. The course is considered upper-division (junior level).

Prerequisites:

This is not a beginning course in composition; it is a majors course. It is open to all CCS entering freshmen; others must demonstrate work already done to an upper-division level. See the Music Department for lower division courses you can take in music composition.

Instructor: **Jeremy Haladyna**
Time: **TBA**
Rooms: **Music Building, Room 0313**

Music Composition CS 102, Section 1

EC#36608

Contemporary Counterpoint, A Survey with Practice

Contemporary concert music...the phrase doesn't immediately bring counterpoint to mind. Yet when the book is written once and for all on the period, its contrapuntal aspects will merit a weighty chapter (and several lighter ones, too).

This twice-a-week course will focus on exercises designed to make us see why composers opt for counterpoint and what guiding principles they adopt in its execution. (One of the most interesting aspects of the study is that, in the century just passed, for instance, there are nearly as many methods as masters, with a multitude of valid solutions.)

Some of the topics touched upon will include: parallels in visual movement and the fine arts, the polytonal counterpoint of Milhaud, neo-tonal counterpoint as redesigned by masters Koechlin and Hindemith, synthetic modal counterpoint as practiced by Messiaen and Jolivet, the atonal, pre-serial counterpoint of the New Vienna School, and textural counterpoint as developed by Gunther Schuller and others.

The course will be taught in a fun, "workshop" style. This means you should be prepared to receive constructive feedback on your work (as it develops) from both the instructor and other class members.

This course satisfies the counterpoint REQUIREMENT for Creative Studies Music Composition majors, and is recommended also for L&S Music majors.

Fall 2016 Course Offerings

For Creative Studies Music Majors, while this course alone may be used in satisfaction of the counterpoint requirement, study of traditional species counterpoint is a most valuable adjunct.

Instructor: **Jeremy Haladyna**
Time: **Monday and Wednesday 12:00pm- 1:20pm**
Place: **BLDG. 494, Room 154**

Music Composition CS 105, Section 1

EC#36673

Music Derived from Other Sources

This seminar offers ten illustrated lectures in which Prof. Barlow demonstrates how music can be derived from language, other music, algorithms, visual images and sound recordings. In these lectures, he will profusely illustrate these concepts by his own compositions, in addition to those of contemporary colleagues. All students will be expected to write a brief report on the class at the end of the course, explaining what they gained from it week by week.

Instructor: **Clarence Barlow**
Time: **Tuesday 3:00pm- 4:50pm**
Place: **BLDG Music, Room 1145**

Music Composition CS 105, Section 2

EC#36681

Favorite Things

Imitation may be the sincerest form of flattery, but this course will go one step further. FIRST, students will analyze and present their favorite works, whether acoustic or electronic; tonal or atonal or serial; chamber or orchestral. THEN, students will write music of their own, based on a single, well-defined element from the works they admire. The goal here is not to write "in the style of" but to use the works analyzed as a source of inspiration and/or a means of exploring new technique(s).

Students will write all music for the same 3-5 member ensemble, to be collaboratively determined at the beginning of the quarter, with the goal of having a completed multi-movement work for chamber ensemble at the end of the quarter.

Instructor: Leslie Hogan
Time: Tuesday and Thursday 12:30pm- 1:50pm
Place: BLDG. 494, Room 154

PHYSICS CS 15A, Section 1

EC# 39545

Experimental Physics

Sign up for one lab section or the other (Wednesday OR Friday - NOT BOTH!)

This is the first quarter of a year-long class designed to help you learn to do experimental physics research. In the first quarter, you will investigate three systems experimentally. It will be up to you to decide what to measure, how to measure it, and what the data mean. Each of you will work alone on your own experiments, and write a short paper about each one. The subjects of the experiments will be:

1. Attenuation of a laser beam by copper sulfate solutions.
2. The period of a pendulum.
3. Flow through small diameter tubes.

You will have access to the classroom for self-directed work on the experiments. Each week you will meet with the instructor to go over your progress and get guidance.

The second and third quarters will cover computer control of experimental apparatus and mechanical

Fall 2016 Course Offerings
design and fabrication. The preparation provided by this class has helped many students get summer positions in research labs on campus and elsewhere.

A lab fee will be assessed to your BARC account.

Required Text:

Taylor, J. *An Introduction to Error Analysis, 2nd Ed.* University Science Books
ISBN-13: 9780935702750

Optional Text:

Williams, J. *Style: The Basics of Clarity and Grace* Longman
ISBN-13: 978-0321953308

Instructor: David Weld
Time: Wednesday, 2:00 pm - 2:50 pm (Lecture)
Wednesday, 3:00 pm - 5:50 pm (Lab)
Place: Broida Hall, Rm. 3314

Experimental Physics

Sign up for one lab section or the other (Wednesday OR Friday - NOT BOTH!)

This is the first quarter of a year-long class designed to help you learn to do experimental physics research. In the first quarter, you will investigate three systems experimentally. It will be up to you to decide what to measure, how to measure it, and what the data mean. Each of you will work alone on your own experiments, and write a short paper about each one. The subjects of the experiments will be:

1. Attenuation of a laser beam by copper sulfate solutions.
2. The period of a pendulum.
3. Flow through small diameter tubes.

You will have access to the classroom for self-directed work on the experiments. Each week you will meet with the instructor to go over your progress and get guidance.

The second and third quarters will cover computer control of experimental apparatus and mechanical design and fabrication. The preparation provided by this class has helped many students get summer positions in research labs on campus and elsewhere.

A lab fee will be assessed to your BARC account.

Required Texts:

Taylor, J. *An Introduction to Error Analysis, 2nd Ed.* University Science Books
ISBN 13: 9780935702750

Optional Text:

Williams, J. *Style: The Basics of Clarity and Grace* Longman
ISBN-13: 978-0321953308

Instructor: David Weld
Time: Wednesday, 2:00 pm - 2:50 pm (Lecture)
Friday, 3:00 pm - 5:50 pm (Lab)
Place: Broida Hall, Rm. 3314

PHYSICS CS 31, Section 1

EC#39602

Newtonian Mechanics

This class is required for all CCS Physics freshmen.

Vectors. Kinematics. Newton's laws of motion. Work and energy. Conservative forces. Momentum. Conservation of momentum. Center of mass motion. Collisions. Systems of variable mass. Introduction to rotations.

****Note: All enrolled students must attend both the lecture and weekly assigned problem session.****

Required Texts:

Kleppner, D. and Kolenkow, R. *An Introduction to Mechanics, 2nd Ed.* Cambridge University Press
ISBN: 978-0-521-19811-0

Optional Texts:

Halliday, D., Resnick, R. and Krane, K.S. *Physics, 5th Edition* John Wiley & Sons
ISBN: 978-0-471-32057-9

Feynman, R.P., Leighton, R.B. and Sands, M. *The Feynman Lectures on Physics,* Basic Books
ISBN: 978-0-465-02493-3 *Volume I: Mainly Mechanics, Radiation, and Heat*
The Millennium Edition

Instructor: **Sathya Guruswamy**
Time: **Tuesday & Thursday, 3:30 pm - 4:50 pm (Lecture)**
 Wednesday, 1:00 pm - 2:50 pm (Problem Session I)
 Wednesday, 3:00pm - 4:50pm (Problem Session II)
Place: **Bldg. 387 Room 104 (Lecture)**
 Bldg. 387 Room 104 (Problem Sessions)

PHYSICS CS 34, Section 2

EC#39610

Electromagnetism

Electric fields. Electric Potential. Electric Currents. DC circuits. Magnetic Fields. The Vector Potential.

Prerequisite: Physics CS 33 or equivalent, vector calculus and consent of instructor.

****Note:** All enrolled students must attend both the lecture and weekly assigned problem session.**

Required Texts:

Resnick, Halliday & Krane

Physics

Wiley

Purcell

Electricity and Magnetism

McGraw-Hill

Feynman

The Feynman Lectures in Physics Volume II

Addison Wesley

Instructor: Tengiz Bibilashvili

Time: Tuesday & Thursday, 3:30 pm - 4:50 pm (Lecture)
Thursday, 1:00 pm - 2:50 pm (Problem Session I)
Thursday, 10:00am - 11:50am (Problem Session II)

Place: Bldg. 387 Room 103 (Lecture)
Bldg. 387 Room 103 (Problem Sessions)

Writing and Literature CS 10, Section 1

EC#00000

Introduction to Creative Writing

This course will introduce students to the methods and practice of creative writing with a focus on fiction. During the first few weeks of the quarter we'll engage in writing activities that address various issues of movement, invention, imagery, revision, dialogue etc.--and then you'll put those techniques to work in your own work.

Instructor: Jervey Tervalon
Time: Friday 11:30am- 10:50am
Place: BLDG. 494, Room 143

Writing and Literature 120, Section 1

EC#00000

Fiction Workshop

Fiction Writing Workshop: Style, offers the motivated undergraduate fiction writer the opportunity to experiment with a number of literary styles by modeling their prose after several well-known literary stylists, as directed by the instructor. Then students will have the opportunity to experience what it's like to participate in a graduate fiction workshop in preparation for similar workshops

Instructor: Jervy Tervalon
Time: Friday 2:00pm- 4:20pm
Place: BLDG. 494, Room 160b

Writing and Literature CS 121, Section 1

EC#00000

Diaries to Stories

The diary as a literary form is as old as the hills. It's incredibly flexible. Authors of all kinds have kept diaries: the common writer, the king and queen, the rag-picket, the poet, the murderer, the mortician, the child, the student, the teacher (less often than the student), the philosopher, the philanderer, the concubine, the critic (less often than the teacher), the curmudgeon, the cur. Their interests in keeping diaries have varied as much as their vocations and luck. One element alone is common to diaries: the entry. In the strictest sense of the word diary, it should be daily, a daily entry. Writers often whole keeping records of their daily lives, thoughts, remembrances, and imaginings, have worked toward stories. That's what you'll be doing in this class.

Optional Textbooks: Boswell's London Journal

Instructor: Caroline Allen
Time: Tuesday and Thursday 1:00pm- 2:20pm
Place: BLDG. 494, Room 160b

Writing and Literature CS 161DS, Section 1

EC#00000

Topics in Multimedia Writing: Digital Storytelling

We will read and discuss examples of digital stories that employ a range of approaches, and students will produce a short- and long-version multimedia, interactive, digital narrative. Projects draw on an understanding of narrative structure, creative practice, research, and use of multimedia tools/code to produce a compelling narrative experience. Possible genres include fiction, journalism, documentary, memoir, research presentation, essay, historical account. Possible modes/media include combinations of audio, graphics, animation, video, music, social media, and coding. No prior experience with software is necessary.

Instructor: Madeleine Sorapure
Time: Monday and Wednesday 4:00pm- 5:15pm
Place: BLDG Phelps, Room 1518

Writing and Literature CS 153PA, Section 1

EC#00000

Reading Like a Writer- Thematic Study: Portrait of the Artist as a Young Person

In this course we read coming-of-age novels and memoirs depicting the process of growing into one's talent, focusing on the hardships and rewards of following a childhood passion into an adult commitment to the life of an artist (including writers and musicians). Assignments will include critical papers as well as exercises in finding one's own voice, nurturing the talent, and commitment to the artistic process (no matter what).

Required Textbooks:

West, R.	<i>The Fountain Overflows</i>	NYRB Classics
Hemingway, E.	<i>A Moveable Feast</i>	Scribner; Reprint ed.
Cather, W.	<i>Song of the Lark</i>	Dover Publications
Patchett, A.	<i>Truth and Beauty</i>	Harper
Lamott, A.	<i>Hard Laughter</i>	North Point Press 1 st ed.
Henri, R.	<i>The Art Spirit</i>	Basic Books

Instructor: Caroline Allen
Time: Tuesday and Thursday 3:00pm- 4:20pm
Place: BLDG. 494, Room 160b

Fall 2016 Course Offerings

Winter 2017 Course Offerings

**College of Creative Studies
Winter 2017
Course Offerings**

Winter 2017 Course Offerings

PAINTING

ART CS 101, Section 1

EC# 01149

Through a combination of assignments and self-determined projects the instructor hopes to aid students in their pursuit of a deeper understanding of the language(s) of painting and help them make the paintings they want to make. This class is open to CCS students and L & S Art majors at Junior level or above.

A course materials fee will be assessed to your BARC account.

Instructor(s):

Dan Connally

Days and Times:

Tuesday, 1pm - 4:50pm

Rooms:

Bldg. 494, Room 120

Winter 2017 Course Offerings

LIFE DRAWING

ART CS 101, Section 2

EC# 01156

Many professional artists draw from life regularly throughout their careers. In addition to working on their own, artists often gather once a week to share a model and work together. (This is not limited to figurative, or even realist artists; this includes abstract painters, poets, singers, and other artists who value the discipline and discovery particular to this activity). This class follows that tradition. There is no group assignment. The goal is to explore and "push" individual practice. . Each artist is working on her own ideas with the understanding that there is value to seeing the process and progress of others. This class adds a formal critique at the end to aid students in understanding and articulating the principles and practice of drawing the nude.

All levels and majors welcome. CCS Art students have priority and are encouraged to repeat this class regularly. There will be an optional section TBA.

Instructor(s):

Hank Pitcher

Days and Times:

Tuesday, 9am - 12:50pm

Rooms:

Bldg. 494, Room 120

Optional Textbooks:

Sir Kenneth Clarke, *The Nude: A Study in Ideal Form*

Winter 2017 Course Offerings

I LOVE ISLA VISTA

ART CS 102

EC# 01198

I love Isla Vista

This class is about making art about our neighbor, neighbors, and neighborhood. This is mostly for painting and drawing students, but is open to students who would want to work in other visual and literary forms. Collaboration is also an option. All levels of experience are welcome.

Instructor(s):

Hank Pitcher

Days and Times:

Monday, 9am - 11:50am

Rooms:

Bldg. 494, Room 120

Winter 2017 Course Offerings

LETTERPRESS PRINTING: METAL AND WOODEN TYPE

ART CS 105

EC# 01271

"The history of typography reflects a continual tension between the hand and the machine, the organic and the geometric, the human body and the abstract system"
Ellen Lupton

This course will introduce students to letterpress printing with emphasis on handset metal and wooden type. Students will develop letterpress printing skills and expand their understanding of the history and practice of movable type as a means to create print works of unique quality and visual interest. Topics, such as typography, 2D design & color theory, textual content in print works and artists' books, and more, will be addressed.

The work of printmaking, so often disguised in the final form, will require diligence throughout the quarter. This is not a course for the student who has any romantic notions about letterpress printing. The art form is labor intensive, precise and systematic. One should come prepared and ready to get their hands dirty.

Class and lab are integral to the course and students must attend both to gain adequate knowledge. Students also will be expected to complete work outside of the class and lab meeting times to develop their course projects.

This course is open to non-majors, however, priority will be given to book arts majors.

Contact instructor for an approval code.

ekstrom@arts.ucsb.edu

Instructor(s):

Linda Ekstrom

Days and Times:

Wednesday, 1pm - 4:20pm and Wednesdays 6pm - 7:50pm

Rooms:

Bldg. 494, Room 107

Winter 2017 Course Offerings

EXPLORING THE ACT OF MAKING MULTIPLES

ART CS 120

EC# 01404

In this class, students will use mold-making as a way to reproduce sculptural forms. We will research elements of repetition in film, fashion, sport, .gifs, to numerous artistic practices. We will also discuss repetitive behaviors found throughout superstitions, traditions, and mental disorders, and question the value of a single precious object verses many. Artists who work within these themes - Charlie Chaplin, Felix Gonzalez-Torres, Anne Hamilton, and Tehching Hsieh, as well as Olympic athletes - offer inspiration for student concepts and practice. The basic open face tile mold will start the discussion of multiples and lead us to plaster and silicone two-part molds, where each student will choose an object to develop further. Themes of cultural memory, identity, and reenactment will also be visited.

Instructor(s):

Emily Baker

Days and Times:

Tuesday and Thursday, 9:30am - 12:20pm

Rooms:

ARTS 0641

Winter 2017 Course Offerings

INTRODUCTORY BIOLOGY: EVOLUTION & DIVERSITY

BIOLOGY CS 20

EC# 02972

Lecture, field and laboratory activities explore the evolutionary origin and diversification of life in a phylogenetic context, from Bacteria and Archaea to Plants, Fungi and Animals.

This class is open to and required for first year CCS Biology students who have completed MCDB 1A.

Instructor(s):

John Latto

Claudia Tyler

Days and Times:

Tuesday and Thursday, 11am - 12:20pm

Rooms:

Bldg. 494, Room 143

Required Textbooks:

David E. Sadava, David M. Hillis, H. Craig Heller, May Berenbaum, Life: The Science of Biology, 10th Edition W. H. Freeman

Winter 2017 Course Offerings

ADVANCED BIOLOGY COLLOQUIUM: NEXT STEPS

BIOLOGY CS 101

EC# 03038

THIS COURSE IS DESIGNED (and strongly encouraged) FOR CREATIVE STUDIES BIOLOGY MAJORS IN THEIR JUNIOR YEAR (seniors may also benefit - check with course instructors).

In this seminar course we will work on your next steps, post-graduation. While the content will focus on preparations for graduate school, it will benefit you in any professional trajectory you have in mind. Topics will include:

- * Finding the right grad school for you
- * Applying to grad school - GRE's, letters of rec, resumes
- * Grant applications
- * Poster presentations
- * Research talks
- * Outreach: talking to the public

Normative number of units for this course is 2.

Instructor(s):

John Latto

Claudia Tyler

Days and Times:

Wednesday, 11am - 12:20pm

Rooms:

Bldg. 494, Room 143

Winter 2017 Course Offerings

PROBLEM SOLVING IN GENERAL CHEMISTRY

CHEMISTRY CS 103

EC# 07229

This course is an adjunct to Chemistry 2B (honors general chemistry).

Problem solving skills will be developed and supplemental lectures will reinforce key concepts. When appropriate, experiments in the upper division undergraduate laboratory may be performed to examine chemical concepts in a laboratory setting. All CCS students enrolled in Chemistry 2A are encouraged to enroll in this course.

Instructor(s):

Leroy Laverman

Days and Times:

Wednesday and Friday, 9am - 9:50am

Rooms:

Bldg. 494, Room 160B

Winter 2017 Course Offerings

CHEMICAL APPLICATIONS OF GROUP THEORY

CHEMISTRY CS 110

EC# 62737

This course will explore the use of group theory and symmetry as applied towards chemical systems and molecules. A basic introduction to the mathematics of group theory is given. Point groups and symmetry operations will be introduced and applied towards the normal coordinate analysis of molecular vibrations as well as the construction of molecular orbitals from symmetry adapted linear combinations of atomic orbitals.

Instructor(s):

Leroy Laverman

Days and Times:

Monday and Wednesday, 11am - 12:15pm

Rooms:

GIRV 2115

Required Textbooks:

Bishop, D. M., Group Theory and Chemistry Dover Press

Winter 2017 Course Offerings

COMPUTER PROGRAMMING AND ORGANIZATION

COMPUTING CS 1B

EC# 09084

Topics in programming and the organization of computers, including algorithms, data and control structures, program design, searching and sorting, recursion, systems programming, register transfer language, and logic design.

This course is the second half of a two quarter sequence (CS1A/CS1B) designed to prepare students to take upper division courses in Computer Science, and participate in undergraduate research projects in Computer Science under the direction of CCS and College of Engineering Computer Science faculty.

In both quarters, the course is paired with CS1L, "Programming Lab", where students undertake individual and group programming projects to build and reinforce their skills and knowledge.

CS1B focuses on modern computer architectures from ground up. The goal is to develop a complete understanding of how hardware and software comes together, and how programming languages evolve as layered abstractions starting from logic gates. We cover the full spectrum of languages from instruction set architectures, to assembly, structured high-level, to object-oriented and scripting languages. We continue with language translation and foundational operating systems, and networking particularly as it relates to modern computer and communication architectures.

Although class space may be acquired via GOLD, final enrollment will be determined by the instructor.

This course is required for all first-year CCS Computing students

Topics in programming and the organization of computers, including algorithms, data and control structures, program design, searching and sorting, recursion, systems programming, register transfer language, and logic design.

This course is the second half of a two quarter sequence (CS1A/CS1B) designed to prepare students to take upper division courses in Computer Science, and participate in undergraduate research projects in Computer Science under the direction of CCS and College of Engineering Computer Science faculty.

In both quarters, the course is paired with CS1L, "Programming Lab", where students undertake individual and group programming projects to build and reinforce their skills and knowledge.

CS1B focuses on modern computer architectures from ground up. The goal is to develop a complete understanding of how hardware and software comes together,

Winter 2017 Course Offerings

and how programming languages evolve as layered abstractions starting from logic gates. We cover the full spectrum of languages from instruction set architectures, to assembly, structured high-level, to object-oriented and scripting languages. We continue with language translation and foundational operating systems, and networking particularly as it relates to modern computer and communication architectures.

Although class space may be acquired via GOLD, final enrollment will be determined by the instructor.

This course is required for all first-year CCS Computing students

Instructor(s):

Murat Karaorman

Days and Times:

Monday and Wednesday, 6pm - 7:20pm

Rooms:

Bldg. 494, Room 143

Winter 2017 Course Offerings

PROGRAMMING LAB

COMPUTING CS 1L

EC# 09100

This course is required for all freshmen (first-year) and lower division CCS Computer Science majors.

A hands-on project and assignment-based course where the principle emphasis of the course will be to gain strong practical and technical skills in C, C++, and Java programming, UNIX: shell, tools, utilities and programming environments. Further emphasis will be on algorithms, user interfaces, and software engineering principles.

The course is open to all CCS students who need additional training and practical insight that is needed to take upper division Computer Science Courses. This is a variable 4-6 unit credit course, students are expected to do work to earn 4 units, but encouraged to put more effort which can lead to extra units. Units awarded will be based upon attendance, general homework assignments, and individual projects. Instruction will be 25% classroom, and 75% hands-on work in the class and on actual programming projects (approximately 3 lab hours per week).

Instructor(s):

Murat Karaorman

Days and Times:

Monday and Wednesday, 7:30pm - 8:50pm

Rooms:

Bldg. 494, Room 143

Winter 2017 Course Offerings

FACULTY RESEARCH SEMINAR IN COMPUTER SCIENCE

COMPUTING CS 10

EC# 09126

The goal of this course is to prepare undergraduate students to engage in research in Computer Science.

Target audience(s):

- * All first year CCS Computing Students
- * Students that want to get involved in research as an undergrad with a CS faculty member
- * Students considering going on to grad school in CS
- * CCS CS and Computing students preparing for their mid-residency review

Students will have the opportunity to both get a sense of the breadth of Computer Science research through attending Faculty Research Presentations, and participating in discussions about faculty research. Students will attend a series of presentations by UCSB CS faculty members, each of which will present an overview of their research. Faculty members will be presenting these talks as a way of recruiting students into their own research labs. Students enrolled in the course will be expected to attend these talks, listen to the speakers, and be prepared to ask the presenter(s) at least one question after the talk about their research area, or about the process of doing research in Computer Science. These presentations will occur Fridays from 1-2pm. There will also be a 30 minute discussion (2-2:30pm) immediately following each of the faculty talks with the students from this course, and the instructor. Students may earn 1 unit of lower division credit by participating in this part of the course provided they have arrive on time for the talks, have a reasonable attendance record and participate in the discussions.

Background needed to take this course:

Open to CMPCS, CMPSC, CPTCS majors, and others by permission of the instructor.

This course is open, with permission of the instructor, to all UCSB students regardless of major or college, that have sufficient Computer Science preparation to be able to meaningfully participate in the course, and have a serious intention and capacity to do research in Computer Science. See "prerequisites" below for more information.

Questions?

Winter 2017 Course Offerings

Contact Omer Egecioglu at omer@cs.ucsb.edu

Special Instructions and/or Prerequisites:

Open to these majors:

- * CPTCS (CCS Computing)
- * CMPCS (CCS Computer Science)
- * CMPSC (CoE Computer Science)
- * CMPEN (CoE Computer Engineering)

and others with appropriate background by permission of the instructor.

Students enrolling in this course should have completed one of the following:

- the first quarter of the College of Creative Studies Computing program: CCS COMPUTING CS 1A, 1L, and 2, OR

- At least the following courses from the lower division of the College of Engineering: CMPSC 16, 24, 40.

This course will be a stretch for all of us. We will be listening to talks aimed to a grad-student level audience about cutting-edge research. It will be over our heads a good bit of the time, and we will have to work very hard just to begin to understand what we are hearing. If that sounds exciting, then this course may be right for you. If not, then you should probably not enroll.

A schedule of the talks can be found [here](#).

Instructor(s):

Omer Egecioglu

Days and Times:

Fridays, 1pm - 2pm and 2pm - 2:30pm

Rooms:

HFH 1132 and HFH 1152

Winter 2017 Course Offerings

EXPLORATIONS IN CRYPTOGRAPHY
COMPUTING CS 130H

EC# 09167

<http://koclab.cs.ucsb.edu/teaching/ccs130h/>

Instructor(s):

Cetin Kaya Koc

Days and Times:

Friday, 3pm - 5:50pm

Rooms:

Bldg. 494, Room 143

Winter 2017 Course Offerings

Adventures in Epistemology: Science, Mythology, and Intuition

INTERDISCIPLINARY STUDIES CS 120

EC# 28258

This course will explore how we know things to be true. Science, myths, and intuition/art all give us ways of knowing and expressing truths. What are the similarities between these modes? How are they different? When are some more appropriate than others? To explore these questions, students will read texts on philosophy of science, mythological studies, and literature and art. We will examine the relative virtues of knowledge, experience, and personal narrative. Class discussions will address these differing truths and course creative projects will allow students to express different truths in understanding themselves and real problems.

Instructor(s):

Steve Smith

Days and Times:

Tuesday 9am - 9:50am and Thursday 9am - 10:50am

Rooms:

Bldg. 494, Room 143

Required Textbooks:

Samir Okasha (2016). *Philosophy of Science: A Very Short Introduction* (2nd Edition). Oxford. ISBN-13: 978-0198745587

Campbell, J. (2008). *Hero with a Thousand Faces* (3rd Edition). New World Library
ISBN-13: 978-1577315933

Winter 2017 Course Offerings

PROBLEM SOLVING II
MATHEMATICS CS 101B
EC# 32722

The second course discussing various mathematical techniques and problem solving strategies

Instructor(s):

Karel Casteels

Days and Times:

Tuesday and Thursday, 3pm - 4:20pm

Rooms:

Bldg. 494, Room 160B

Winter 2017 Course Offerings

ADVANCED LINEAR ALGEBRA I

MATHEMATICS CS 108A

EC# 32771

In this course, we will cover the main topics in Linear Algebra: Algebra of matrices, linear systems of equations, vector spaces, linear independence, basis and dimension, infinite-dimensional vector spaces, linear transformations, matrix representation, isomorphisms, quotient spaces, dual spaces, and determinants

The language and concepts of matrix theory and, more generally, of linear algebra have come into widespread usage in the social and natural sciences, computer science, and statistics. In addition, linear algebra continues to be of great importance in modern treatments of geometry and analysis.

Instructor(s):

Maria Isabel Bueno Cachadina

Days and Times:

Monday, Wednesday, Thursday, and Friday, 1pm - 2:50pm

Rooms:

Bldg. 494, Room 164B

Required Textbooks:

Friedberg, S. H., Insel, A. J., Spence, L. E., Linear Algebra Prentice Hall, 4th ed.

Winter 2017 Course Offerings

INTRODUCTION TO REAL ANALYSIS

MATHEMATICS CS 117

EC# 32797

Foundations of real analysis with rigorous proofs

Instructor(s):

Birge Huisgen-Zimmerman

Days and Times:

Monday, Wednesday, and Friday, 11am - 12:20pm

Rooms:

Bldg. 494, Room 164B

Required Textbooks:

Edward D. Gaughan, Introduction to Analysis, Fifth Edition American Mathematical Society

Winter 2017 Course Offerings

TOPICS IN DISCRETE MATHEMATICS

MATHEMATICS CS 120

EC# 32813

An introduction to graph theory with a focus on graph coloring.

Instructor(s):

Karel Casteels

Days and Times:

Monday and Wednesday, 3pm - 4:50pm

Rooms:

Bldg. 494, Room 164B

Winter 2017 Course Offerings

COMPLEX ANALYSIS I
MATHEMATICS CS 122A
EC# 32854

This is the first of a two-quarter introductory course on complex analysis. Complex analysis is an old and beautiful subject, and it is also extremely useful. We will explore its analytic and geometric sides, balancing theory and computation. Topics will include complex numbers, differentiability of functions of one complex variable, Cauchy-Riemann equations, conformal mapping, Cauchy's Theorem, Cauchy Integral Formula and its consequences.

Instructor(s):

Thomas Sideris

Days and Times:

Tuesday and Thursday, 11am - 12:20pm

Rooms:

Bldg. 494, Room 164B

Optional Textbooks:

Jerrold Marsden and Michael Hoffman, Basic Complex Analysis, 3rd edition W. H. Freeman

Winter 2017 Course Offerings

MULTIDIMENSIONAL ANALYSIS II: INTEGRATION

MATHEMATICS CS 130B

EC# 62729

This is the second part of a two-quarter sequence on Multidimensional Analysis. This course focuses on integration. We will start with a brief review of integration in one variable. The first part of the course will present the main ideas of multiple integrals: volume and the n-dimensional integral, Riemann sums, iterated integrals and Fubini's theorem, the change of variables theorem, and improper integrals. The second part of the course studies line and surface integrals, Green's theorem, and Stokes' theorem.

Instructor(s):

Maria Isabel Bueno Cachadina

Days and Times:

Tuesday and Thursday, 3:30pm - 5:20pm

Rooms:

Bldg. 494, Room 164B

Required Textbooks:

C.H. Edwards, Jr., Advanced Calculus of Several Variables Dover Publications

Winter 2017 Course Offerings

INDIVIDUAL INSTRUCTION IN MUSIC COMPOSITION

MUSIC CS 101, Section 1

EC# 38174

One on one instruction in music composition, with an emphasis on music in the notated tradition. Students should come by Old Little Theater 154B to sign up for a weekly lesson time prior to the first day of classes.

Instructor(s):

Leslie Hogan

Days and Times:

TBD

Rooms:

Bldg. 494, Room 154B

Winter 2017 Course Offerings

CCS COMPOSITION TUTORIAL

MUSIC CS 101, Section 2

EC# 38182

Private tutorial instruction in Composition, centered around the original work majors complete towards exit portfolios, recitals and juries. Principally for CCS Music Composition majors. The course is considered upper-division (junior level).

Prerequisites:

This is not a beginning course in composition; it is a majors course. It is open to all CCS entering freshmen; others must demonstrate work already done to an upper-division level. See the Music Department for lower division courses you can take in music composition.

Instructor(s):

Jeremy Haladyna

Days and Times:

TBD

Rooms:

MUSIC 0313

Winter 2017 Course Offerings

"RHYTHM OF THE NEWS, PART I"

MUSIC CS 105, Section 1

EC# 38281

Note Well: This is the first quarter of a two quarter, project based course. Students must plan to enroll in the second quarter of the course.

In Part 1 of this course, College of Creative Studies music composition majors will select a written news article and explore the connection between music and the written word. Students will learn how to examine and internalize such things as phrase structure, the actual sounds that words and phrases produce, the tone of the story, point of view, etc., and will write an original work of no more than 3-4 minutes duration to be used in Part 2 of this course.

In Part 2, taught by Gerry Hansen, participants will realize their reactions to their selected news stories, creating a performance of their choice, using actors, performance art, dance, constructed video, etc., to accompany their music created in Part 1. The culmination of this course will result in the final projects being filmed using multi-camera and green screen possibilities in Kerr Hall Studio A.

Instructor(s):

Leslie Hogan

Days and Times:

Monday, 12pm - 2:50pm

Rooms:

Bldg. 494, Room 154

Winter 2017 Course Offerings

READINGS IN NEW MUSIC

MUSIC COMPOSITION CS 105, Section 2

EC# 38299

THIS COURSE IS A ***REQUIRED*** COURSE FOR CCS MUSIC COMPOSITION MAJORS, WHO MUST ENROLL IN AT LEAST ONE UNIT'S CREDIT. AVAILABLE TO OTHER UNDERGRADUATES STUDYING COMPOSITION ON A SPACE-AVAILABLE BASIS.

In the first analysis, the course concerns itself with READING. That is, it provides an opportunity to try out your music with real musicians and conductor in a studio setting. Just occasionally, when things work well, the result can be an adequate recorded performance, invaluable for graduate school applications, competitions, and for personal archiving. Creative Studies funding is annually set aside to rent the studio and so that we may hire the best musicians in the orbit of the university for these readings. This year we continue in the UCSB Sound Recording facility, second floor, Kerr Hall, thanks to the good offices of the staff of Instructional Development.

In the second analysis, this course may prove—on occasion—“A MOUNTAINTOP EXPERIENCE.”

Participants should bring take-away media with them to each class session: flash drive, USB porta-drive, or CD-R/RW.

Recording services will only be contracted for those CCS and L&S undergraduate music majors who *officially enroll* and who *attend class regularly.* CCS Music Majors are REQUIRED to enroll in the class for at least one unit, and may only be excused with the permission of the faculty advisor. Sessions are scheduled from 12 noon to 3pm. Each session must be completed in the time allotted, with no run-over. Come prepared to the first class with the following:

*solo piano pieces. We'll record as many as we can. If possible, drop off your piano pieces to Jeremy or Leslie in advance of the first class meeting. SESSION ONE is partly a WORKING session!

*list of pieces you would like to have recorded, arranged in priority order. Include full instrumentation and an accurate duration. It is highly recommended that you place finished works at the top and that works-in-progress should be a lesser priority. We already need accurate percussion lists, if applicable. Performance materials will be emailed directly to players to expedite delivery. You will be notified when to do this.

Have another copy of the score and parts available at the session in case of emergency.

Instructor(s):

Jeremy Haladyna

Leslie Hogan

Days and Times:

Winter 2017 Course Offerings

Wednesday, 12pm - 2:50pm

Rooms: Kerr Hall, Room 2110

Pitch as a Compositional Tool

MUSIC CS 105, Section 3

EC# 38307

"Pitch as a Compositional Tool", MUS 211B. This is the week-by-week curriculum for the course:

The Scaling of Subjective Pitch

Sensory Consonance and Dissonance

Pitch Intonation and Temperament

Measuring Harmonicity

The Rationalization of Scales

The North Indian Rāga System

Musically relevant Phonetics

What is Microtonality?

Parametric Aspects of Timbre

Diachrony: Rhythm – Pitch – Timbre

Instructor(s):

Clarence Barlow

Days and Times:

Tuesday, 4:00pm - 6:00pm

Rooms:

MUSIC 1129

Winter 2017 Course Offerings

EXPERIMENTAL PHYSICS
PHYSICS CS 15B, Section 1
EC# 41178

Sign up for one lab section or the other (Wednesday OR Friday - NOT BOTH!)

This is the second quarter of a year-long class designed to help you learn to do experimental physics research. The second quarter will focus on how personal computers with multi-function data acquisition boards are used to control experiments and take data. The boards will be controlled using National Instruments LabVIEW software. After some initial exercises, you will write your own LabVIEW programs, which will use a data acquisition card to produce signals and to read time-dependent analog signals and convert them to digital format. You will then write a feedback control program that measures the temperature of a copper rod and changes the voltage applied to a heater so as to keep the temperature constant. Prior programming experience is not required. Please note, however, that the real purpose of the course is not to teach you LabVIEW! Instead, you will be expected to learn it by yourself, with an occasional bit of help. This is much closer to what will happen when you are working in a lab. Everyone in the lab who knows what they are doing will be too busy to teach you! As a second component to the course, we will take the time to explore a number of the research labs here on campus that might be of interest to you. Nothing beats working in a lab for letting you find out what doing physics is like (little resemblance to classes!), what going to graduate school would be like, and what use all this book learning really is (a lot actually). So, each of you will visit a couple of labs during the quarter and report back to the class on what you discovered.

A lab fee will be assessed to your BARC account.

Instructor(s):

Deborah Fygenon

Days and Times:

Wednesday, 2pm - 2:50pm and Wednesday, 3pm - 5:50pm

Rooms:

SSMS 1301 (W 2-2:50); Broida 3314 (W3-5:50)

Required Textbooks:

Essick, J., Hands-On Introduction to LabVIEW for Scientists and Engineers Oxford University Press

Moore, J., Building Scientific Apparatus Peachpit Press

Winter 2017 Course Offerings

EXPERIMENTAL PHYSICS

PHYSICS CS 15B, Section 2

EC# 41186

Sign up for one lab section or the other (Wednesday OR Friday - NOT BOTH!)

This is the second quarter of a year-long class designed to help you learn to do experimental physics research. The second quarter will focus on how personal computers with multi-function data acquisition boards are used to control experiments and take data. The boards will be controlled using National Instruments LabVIEW software. After some initial exercises, you will write your own LabVIEW programs, which will use a data acquisition card to produce signals and to read time-dependent analog signals and convert them to digital format. You will then write a feedback control program that measures the temperature of a copper rod and changes the voltage applied to a heater so as to keep the temperature constant. Prior programming experience is not required. Please note, however, that the real purpose of the course is not to teach you LabVIEW! Instead, you will be expected to learn it by yourself, with an occasional bit of help. This is much closer to what will happen when you are working in a lab. Everyone in the lab who knows what they are doing will be too busy to teach you! As a second component to the course, we will take the time to explore a number of the research labs here on campus that might be of interest to you. Nothing beats working in a lab for letting you find out what doing physics is like (little resemblance to classes!), what going to graduate school would be like, and what use all this book learning really is (a lot actually). So, each of you will visit a couple of labs during the quarter and report back to the class on what you discovered.

A lab fee will be assessed to your BARC account.

Instructor(s):

Deborah Fygenon

Days and Times:

Wednesday, 2pm - 2:50pm and Friday, 3pm - 5:50pm

Rooms:

SSMS 1301 (W 2-2:50); Broida 3314 (F 3-5:50)

Required Textbooks:

Essick, J., Hands-On Introduction to LabVIEW for Scientists and Engineers Oxford University Press

Moore, J., Building Scientific Apparatus Peachpit Press

Winter 2017 Course Offerings

MECHANICS AND WAVES

PHYSICS CS 32

EC# 41269

Rotational motion. Angular momentum. Oscillatory motion. Gravity and central force motion. Elastic waves.

Must be a CCS Physics Major to register or otherwise must have instructor approval.

Instructor(s):

Francesc Roig

Brian Youngblood

Days and Times:

Tuesday and Thursday, 3:30pm - 4:50pm Wednesday, 1pm - 2:50pm Wednesday
3pm - 4:50pm

Rooms:

Bldg. 387, Room 104

Required Textbooks:

Kleppner and Kolenkow, An Introduction to Mechanics Cambridge

Resnick, Halliday, and Krane, Physics, Volume 1 (5th edition) Wiley

Feynman, Leighton and Sands, The Feynman Lectures on Physics, Vol. I Basic Books

Winter 2017 Course Offerings

MECHANICS AND WAVES

PHYSICS CS 32

EC# 41269

Rotational motion. Angular momentum. Oscillatory motion. Gravity and central force motion. Elastic waves.

Must be a CCS Physics Major to register or otherwise must have instructor approval.

Instructor(s):

Francesc Roig

Brian Youngblood

Days and Times:

Tuesday and Thursday, 3:30pm - 4:50pm Wednesday, 1pm - 2:50pm Wednesday
3pm - 4:50pm

Rooms:

Bldg. 387, Room 104

Required Textbooks:

Kleppner and Kolenkow, An Introduction to Mechanics Cambridge

Resnick, Halliday, and Krane, Physics, Volume 1 (5th edition) Wiley

Feynman, Leighton and Sands, The Feynman Lectures on Physics, Vol. I Basic Books

Winter 2017 Course Offerings

ELECTROMAGNETISM AND OPTICS

PHYSICS CS 35

EC# 41350

Magnetic induction. Magnetic Materials. AC Circuits. Maxwell's equations. Electromagnetic waves. Fermat's principle. Ray optics. Wave optics. Diffraction. Polarization of light.

Breakdown of class time will be as follows:

- * Lecture on Tuesday from 3:30 to 4:50
- * Lecture on Thursday from 11 to 12:20
- * Problem sessions Thursday from 1 to 2:50 and from 3 to 4:50

Instructor(s):

Tengiz Bibilashvili

Brian Youngblood

Days and Times:

1) Tuesday, 3:30pm - 4:45pm (Lecture); 2) Thursday, 11:00am - 12:15pm (Lecture);
3) Thursday, 1:00pm - 2:50pm (Problem Session); 4) Thursday, 3:00pm - 4:50pm
(Problem Session);

Rooms:

1) GIRV 2119; 2) CHEM 1171; 3) 494 160B; 4) HSSB 3202;

Required Textbooks:

Resnick, Halliday, & Krane, Physics, vol. 2 Wiley

Purcell, Electricity and Magnetism Cambridge

Feynman, The Feynman Lectures in Physics Volume II Basic Books

Winter 2017 Course Offerings

VECTOR ANALYSIS WITH APPLICATIONS TO PHYSICS

PHYSICS CS 140

EC# 41418

This class is open ONLY to First year CCS Physics Majors.

Partial Differentiation. Power Series for functions of more than one variable. Surface and Volume integrals. Vector Fields - gradient, divergence, curl. Gauss' theorem. Stoke's theorem. Applications to Physics.

Instructor(s):

Francesc Roig

Days and Times:

Friday, 2pm - 3:50pm

Rooms:

Bldg. 494, Room 164B

Winter 2017 Course Offerings

WRITING & LITERATURE COLLOQUIUM

WRITING AND LITERATURE CS 1

EC# 60475

UCSB faculty working in Creative Writing, Writing Studies, and Literary Studies present their research or creative work to expose students to examples of topics, theories, and methods in those disciplines.

Instructor(s):

Kara Mae Brown

Days and Times:

Tuesday, 5:30pm - 6:50pm

Rooms:

Bldg. 494, Room 143

Winter 2017 Course Offerings

FRESHMAN SEMINAR
WRITING AND LITERATURE CS 2
EC# 60483

Students engage in discussions of the presentations given in the Writing and Literature Colloquium. Focuses on introducing the disciplines and exploring the relationships between the material and the students' interests.

Instructor(s):

Kara Mae Brown

Days and Times:

Thursday, 5:30pm - 6:50pm

Rooms:

Bldg. 494, Room 143

Winter 2017 Course Offerings

The Art of the Podcast: Welcome to Night Vale

WRITING AND LITERATURE CS 5

EC# 67470

“A friendly desert community where the sun is hot, the moon is beautiful, and strange lights pass overhead while we all pretend to sleep. Welcome to Night Vale.”

-Welcome to Night Vale, Episode 1: “Pilot”

This fictional radio show from the sci-fi, horror, fantasy town of Night Vale has sparked an interest in the previously underutilized medium of podcasts. In the 4 years since its pilot episode, the popularity of Welcome to Night Vale has exploded among modern audiences. In this course, we will be exploring how Welcome to Night Vale, the podcast, and its spin-off creations (Welcome to Night Vale: The Novel, and Alice Isn't Dead) have taken advantage of this new method of storytelling to create a compelling story and strange, mystifying universe where the strange becomes mundane, where all the conspiracies are true, and where a friendly voice speaks softly to you of the abject horrors and everyday mishaps that plague a community.

Student Leader: Canelle Irmas

**** A MAXIMUM OF 2 UNITS MAY BE EARNED IN THIS CLASS ****

Instructor(s):

Caroline Allen

Days and Times:

Thursday, 4pm - 5:20pm

Rooms:

Bldg. 494, Room 143

Required Textbooks:

ISBN: 978-0-06-246861-1 Author: Joseph Fink & Jeffrey Cranor Title: Mostly Void, Partially Stars: Welcome to Night Vale Episodes, Volume 1 Edition: First Edition

Publisher: HarperCollins

ISBN: 978-0-06-235142-5 Author: Joseph Fink & Jeffrey Cranor Title: Welcome to Night Vale: A Novel Edition: First Edition Publisher: HarperCollins

Winter 2017 Course Offerings

The Making of Spectrum Literary Journal

W&L CS 5, Section 2

EC# 80184

Our colloquium will consist of the production and promotion of the 60th edition of Spectrum, the longest-running literary journal in Santa Barbara and the UC system. This 60th edition will be an anthology of the best work from the past decade of Spectrum publications. Coursework will mainly consist of reading past editions of Spectrum and researching past authors' contact information to request permission to reprint. All students in the course will be staff readers and some will take on additional roles such as content editor and social media manager.

The class will meet once a week for a two-hour session. We will read a total of 17 journals, ensuring that each journal is read at least twice. Readers will select outstanding pieces to be considered for the final journal. We will then contact the authors to request permission to potentially reprint their work.

Student Leaders: Corinne Guichard and Steenalisa Tilcock

Instructor(s):

Kara Mae Brown

Days and Times:

Thursday, 7:00pm - 8:30pm

Rooms:

Bldg. 494, Room 143

Winter 2017 Course Offerings

INTRODUCTION TO LITERARY STUDIES

WRITING AND LITERATURE CS 30

EC# 62711

A creative engagement with the study of literature

Instructor(s):

Yunte Huang

Days and Times:

Monday, 3pm - 5:20pm

Rooms:

Bldg. 494, Room 143

Required Textbooks:

Gertrude Stein, Tender Buttons Dover

Ernest Fenollosa, The Chinese Written Character as a Medium for Poetry City Lights

Susan Howe, The Midnight New Directions

Yunte Huang, Charlie Chan Norton

Winter 2017 Course Offerings

CREATIVE NONFICTION WORKSHOP

WRITING AND LITERATURE CS 130

EC# 60491

"The most essential gift for a good writer is a built-in shockproof s**t detector. This is the writer's radar, and all great writers have it." Ernest Hemingway. In Paris Review Spring 1958, from the Oxford Dictionary of Quotations, 369:14. This course will introduce students to the methods and practice of writing nonfiction with a focus on the memoir and the personal essay in its many manifestations. During the first few weeks of the quarter we'll engage in writing activities that address various issues of observation, invention, imagery, revision, dialog and the philosophical questions writing memoir generate etc.--and then you'll put those techniques to work in your own narratives.

Instructor(s):

Jervey Tervalon

Days and Times:

Friday, 11:30am - 1:50pm

Rooms:

Bldg. 494, Room 143

Required Textbooks:

Hemingway, E., *A Moveable Feast* Scribner

Winter 2017 Course Offerings

TRAVEL WRITING WORKSHOP

WRITING AND LITERATURE CS 131

EC# 60509

Students will read examples of contemporary travel writing from the Best of American Travel Writing anthologies of 2015 and 2016, and Rebecca Solnit's collection of autobiographical essays/meditations on what it means to willingly court uncertainty, as one does in travel. We will also investigate the meaning of home and its relation to the ever-evolving and perhaps traveling self. Travel writing can include many kinds of writing and subject matter, including writing about food, music, clothes, language, politics, and environmental disaster. Students in this course will write four travel pieces to be read aloud and discussed in class. Our concerns will include the writing itself, especially the skills involved in creating a sense of place, movement, and character.

Instructor(s):

Caroline Allen

Days and Times:

Tuesday and Thursday, 1pm - 2:20pm

Rooms:

Bldg. 494, Room 143

Required Textbooks:

Andrew Mc Carthy and Jason Wilson, eds. *The Best American Travel Writing 2015*
Mariner Books

Bill Bryson and Jason Wilson, eds., *The Best American Travel Writing 2016* Mariner
Books

Rebecca Solnit, *A Field Guide to Getting Lost* Penguin books

Winter 2017 Course Offerings

SPIRITUAL POETRY: RUMI, RILKE, AND LEVERTOV

WRITING AND LITERATURE CS 153SP

EC# 60517

"Literature," said F.R. Leavis, "is the supreme means by which we renew our sensuous and emotional life and learn a new awareness."

In this seminar we will explore three great poets -- Rumi, Rilke, and Denise Levertov -- with Leavis' remark as a guiding light.

Other guiding lights:

How can these poets help us with our suffering?

How can they help us -- borrowing from Rilke -- keep holy all that befalls us?

And, finally, what can we learn from these poets to strengthen our own writing?

Instructor(s):

Teddy Macker

Days and Times:

Tuesday and Thursday, 2:30pm - 3:50pm

Rooms:

Bldg. 494, Room 143

Required Textbooks:

Rainer Maria Rilke; Stephen Mitchell, *The Selected Poetry of Rainer Maria Rilke*
Vintage

Rumi; Coleman Barks *The Essential Rumi, New Expanded Edition* HarperOne

Denise Levertov, *The Collected Poems of Denise Levertov* New Directions

Roger Housden, *Risking Everything: 110 Poems of Love and Revelation* Harmony

Winter 2017 Course Offerings

Spring 2017 Course Offerings

**College of Creative Studies
Spring 2017
Course Offerings**

Spring 2017 Course Offerings

DRAWING

ART CS 101, Section 1

EC# 01123

This class is meant to help you find/create a personal language of drawing. It is meant for persons who want to make images and want to do so in a context of exploration and response. I will propose (and in some cases, insist upon) certain experiments, but I am eager to hear your ideas for productive projects. Most of the drawing that goes on in the class will not be prescribed by me, unless you want it so. In any case, you should come to class with ideas for images, and tools and energy to realize them.

A course materials fee will be assessed to your BARC account.

Instructor(s):

Dan Connally

Days and Times:

Tuesday, 1:00pm - 3:20pm

Rooms:

Bldg. 494, Room 136

Spring 2017 Course Offerings

Life Drawing

ART CS 101, Section 2

EC# 01131

This class is modeled after the tradition of artists gathering once a week to share a model and work together. Not just figurative artists, this includes sculptors, poets, musicians, and other artists who value the discipline and discovery particular to this activity.

First we draw from the model for 3 hours and then we critique for 1 hour. Students at all levels and from all disciplines are welcome.

There are no assignments. The goal is to explore and develop individual ideas. Each artist works on her own problems with the understanding that there is value to seeing the process and progress of others. The critique at the end of the drawing session discusses principles and the practice of drawing the nude in relation to the work of the individual students in the class. The goal of the instructor during the drawing session to assist and not direct.

The Pose: The model will keep the same pose for each 3-hour session. Please note that students wishing to do "gesture" drawings may move around the room to have different poses to draw.

Materials: There is no restriction on size or medium except that the work be monochromatic. (Red chalk on white paper is monochromatic, red chalk on green paper is polychromatic) There are drawing boards in the classroom and basic white drawing paper is provided. Students are encouraged to experiment with different materials to suite their practice.

There will be an optional evening drawing session once a week. Time TBD.

CCS art majors are encouraged to repeat this class as often as they wish.

Prerequisites:

Open to all students, CCS and L&S Art Students have first priority

A course materials fee will be assessed to your BARC account.

Instructor(s):

Hank Pitcher

Days and Times:

Spring 2017 Course Offerings

Tuesday, 9:00am - 12:50pm

Rooms:

Bldg. 494, Room 120

Life Painting

ART CS 101, Section 3

EC# 01149

Open to all students. The goal is to develop individual skills and ideas.

First we paint from the model for 3 hours and then we critique for 1 hour.

The model will keep the same but a different pose for each 3-hour session. We may carry over a pose for two sessions towards the end of the class.

Materials: There is no restriction on size or medium but oil or acrylic are preferable.

CCS students have first priority.

A course materials fee will be assessed to your BARC account.

Instructor(s):

Hank Pitcher

Days and Times:

Thursday, 9:00am - 12:50pm

Rooms:

Bldg. 494, Room 120

FIELD RESEARCH: LOS ANGELES CONTEMPORARY ART

ART CS 112, Section 3

EC# 01347

UCSB and Santa Barbara can be considered an extension to the north of one of the major art centers of the world - Los Angeles. This quarter we will have the opportunity to see a number of substantial art exhibitions and venues throughout the Los Angeles area. The course will take students on four one-day field trips, to view art firsthand and see as many venues as possible. Field-trips will take place on either, Friday, Saturday or Sunday, depending on student consensus and schedules. Particulars to be determined at our first class meeting.

Weekly class meetings will include lectures and discussions on topics related to contemporary art, overviews of the venues we will visit, and discussions upon return of the works we viewed. Logistics for traveling will also be organized at the weekly meetings.

Transportation needs: Students will be responsible for carpool travel, and for sharing expenses with those who drive. Ratio of 1:4 - 1 Car (with seatbelts & insurance!) for every 4 students, including the driver. Students willing to drive will have enrollment priority. .

Write me for an approval code. Please let me know if you are able to drive:

mulfinger@arts.ucsb.edu

Instructor(s):

Jane Mulfinger

Days and Times:

Friday, 9:00am - 10:20am

Rooms:

Bldg 494, Room 143

RESEARCH AND PRACTICE: INDEPENDENT STUDIO PROJECTS

ART CS 112, Section 1

EC# 01321

Students will develop independent art projects within a seminar setting. Each student will define their project, create a time line for production and meet weekly with the members of the course to allow for input and critique as individual projects progress. Students will be expected to conduct research pertinent to their project and incorporate this in the discussion of their work. A course reader will be compiled by the instructor with one article contributed by each student according to their individual research.

The goal of this course is to advance one's studio practice and art work. Students may explore a new direction in their work, or create a new body of work or a limited edition series, or finalize work for an exhibition. Studio visits will be included and we will take one field trip to Los Angeles.

EMAIL INSTRUCTOR for an APPROVAL CODE ekstrom@arts.ucsb.edu

Include a description of your project for the course.

Instructor(s):

Linda Ekstrom

Days and Times:

Tuesdays, 5:30pm-8:50pm

Rooms:

Bldg. 494, Room 136

Spring 2017 Course Offerings

READING PAINTING

ART CS 112, Section 2

EC# 01339

In this class we'll read an eclectic assortment of texts - essays, artists' statements and interviews - with an eye toward understanding the ways in which painters represent themselves and their work. We'll also consider the critical writings of several artists. There will be weekly writing assignments. Enrollment is limited to Art majors and Literature students but exceptions will be considered.

Instructor(s):

Dan Connally

Days and Times:

Wednesdays, 5:00pm-6:20pm

Rooms:

Bldg. 494, Room 136

THE APPARATUS : INVESTIGATIONS OF PERFORMATIVE SCULPTURE

ART CS 125, Section 1

EC# 01396

What do water-wings, the Bowflex, microscopes, and crutches have in common? In this course, students will create a working definition of what an apparatus is in relation to their body, and relate it to the study of ergonomics. We will study the plasticity of the word "apparatus" while pursuing the craft of performance and of construction. From this broader understanding, students will explore construction methods in building their first apparatus, a simple box, which will also serve as their stage. Based on the themes of embodied memory, ritual, and range of motion, students will evolve their understanding of the apparatus as they interact with it as their performance partner. We will focus on the bookends of performance, timing, and how to engage the audience, as well as how to display performative ephemera and residue.

Instructor(s):

Emily Baker

Days and Times:

Tuesday and Thursday, 9:00am - 11:50am

Rooms:

Arts 0641

Optional Textbooks:

Battcock and Nickas *The Art of Performance*

Hopkins, John *The Theatre of the Bauhaus*

Spring 2017 Course Offerings

Intro Mycology: The FUNgus Among Us

BIOLOGY CS 10, Section 1

EC# 02782

This course aims to have students collectively discover the role fungus plays ecologically, as well as its current and potential human uses such as medicine, remediation, pesticides, and the culinary arts. Students will each conduct one weekly group presentation on a recent scientific paper of their choosing highlighting an interesting property of fungus and its potential human application.

Student Leader: Gabby Najm

Instructor(s):

John Latto

Days and Times:

Tuesday, 3:00pm - 4:45pm

Rooms:

Bldg. 494, Room 143

Required Textbooks:

Stamets, P. *Mycelium Running: How Mushrooms Can Help Save the World*

Spring 2017 Course Offerings

WALKING BIOLOGY

BIOLOGY CS 25, Section 1

EC# 02840

"The pleasures, the values of contact with the natural world, are not reserved for the scientists. They are available to anyone who will place himself under the influence of a lonely mountain top - or the sea - or the stillness of a forest; or who will stop to think about so small a thing as the mystery of a growing seed."

- Rachel Carson, *Lost Woods* (1954)

This field course is designed to introduce non-biologists (and biology freshmen) to the "wild" natural habitats around us. We will visit a diverse range of habitats in Santa Barbara, including oak woodlands, chaparral, coastal dune, salt marsh, sandy beach, rocky intertidal, and stream. In each of these natural communities we will observe patterns, learn about its natural history and discuss ecological and evolutionary questions. Advanced biology students interested in general field experience are also welcome. There will be several reading and writing assignments. Normative number of units for this course is 3.

Instructor(s):

Claudia Tyler

Days and Times:

Thursdays, 1:00pm-3:50pm

Rooms:

Bldg 494, Room 136

Required Textbooks:

Lentz, Joan Easton *A Naturalist's Guide to the Santa Barbara Region* Heyday Books

Spring 2017 Course Offerings

INTRODUCTORY BIOLOGY: ECOLOGY AND PHYSIOLOGY

BIOLOGY CS 30, Section 1

EC# 02865

THIS COURSE IS DESIGNED AND REQUIRED FOR NEW CREATIVE STUDIES
BIOLOGY MAJORS (incoming students to UCSB)

This course introduces students to the fundamental concepts of ecology and physiology, integrating the two and combining them with evolutionary principles introduced in Biol CS 20 to better understand the distribution and abundance of organisms. Students will be exposed to primary research literature and classic experiments.

Prerequisites: This class is open to and required for first year CCS Biology students who have completed MCDB 1A, and either Biol CS 20 or EEMB 3.

Instructor(s):

John Latto

Days and Times:

Tuesdays and Thursdays, 11:00am-12:20pm

Rooms:

Bldg 494, Room 143

Spring 2017 Course Offerings

ADVANCED COLLOQUIUM II: SCIENCE COMMUNICATION

BIOLOGY CS 101, Section 1

EC# 02881

Students will learn the basics of and practice written and oral communication of scientific findings to various target audiences. Emphasis is on communicating the scientific research process as well as interpretation and significance of findings. Students will also identify and critique selections of current science in the news.

****This class is open to all majors.****

Instructor(s):

Kathy Foltz

Days and Times:

Mondays, 3:00pm-4:50pm

Rooms:

Bldg 494, Room 143

Optional Textbooks:

Otto, Shawn *The War on Science* Milkweed Editions Publishing

Spring 2017 Course Offerings

PROBLEM SOLVING IN GENERAL CHEMISTRY

CHEMISTRY CS 103, Section 1

EC# 06874

Problem solving skills will be developed and supplemental lectures will reinforce key concepts. When appropriate, experiments in the upper division undergraduate laboratory may be performed to examine chemical concepts in a laboratory setting.

Instructor(s):

Leroy Laverman

Days and Times:

Monday and Wednesday, 10:00am - 10:50am

Rooms:

Bldg 494, Room 160B

Spring 2017 Course Offerings

MID RESIDENCY REVIEW

COMPUTING CS 10, Section 1

EC# 08599

This course is required for all CCS CS majors that are scheduled to do a mid-residency review in the 2016-2017 school year. This includes all students that matriculated in Fall 2015 as freshmen or junior transfers that have not yet presented and passed an MRR. It also includes any students that want to graduate in Spring 2017 that have not yet passed an MRR.

Prerequisites:

Only open to CCS CS and CCS Computing majors.

Instructor(s):

Omer Egecioglu

Days and Times:

Wednesdays, 11:00am-12:20pm and 5:00pm-6:20pm

Rooms:

Bldg 494, Room 143

Spring 2017 Course Offerings

Topics in Machine Learning

COMPUTING CS 10, Section 2

EC# 08607

We will study different methods and techniques in Machine Learning, Statistical Inference, Natural Language Processing, and Deep Learning. Topics will include motivation and exploration of: different machine learning models, techniques for data transformation and model evaluation. Students will have the opportunity to complete projects for different objectives such as enhancing research understanding, participating in machine learning competitions or prepare for a machine learning internship in industry.

This is a student-led colloquium. The student leaders are Kevin Malta and Daniel Spokoyny.

Instructor(s):

Murat Karaorman

Days and Times:

Tuesdays & Thursdays, 5:00-5:50pm

Rooms:

Building 494, Room 143

COMPUTING FOR THE CLOUD AND INTERNET OF THINGS

COMPUTING CS 130E, Section 1

EC# 08631

The term Cloud has long been used as a metaphor for the Internet. Servers connected to the Cloud provide data and/or computing services to authorized clients using standard protocols. The Cloud conceals a complex infrastructure which makes it relatively easy to develop client and the server applications that can be deployed anywhere geographically with high availability.

The Internet of Things (IoT) is the network of physical objects, devices, vehicles, buildings and other items which are embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data. Cloud computing is a natural evolution of network computing, and encompasses many broad computing paradigms: distributed, grid, utility, on-demand, open source; Web services; P2P; Web 2.0, infrastructure as a service (IaaS), platform as a service (PaaS), software as a service (SaaS). Cloud computing is a paradigm of computing in which dynamically scalable and often virtualized resources are provided as a service over the Internet. IoT is the next step in the evolution of Computing where advances in Cloud and communication technologies will lead to billions of smart objects to connect to the Internet.

IoT enables an exchange of data and services never available before and in a more secure way. Led by industry giants Apple, Microsoft, IBM, Google and Amazon designing IoT standards and interface specifications and infrastructure for both open and closed eco-systems and hardware vendors such as TI, Intel, Nvidia offering micro controllers and SDKs we already have a proliferation of smart IoT devices.

The revolution is still at its infancy, yet about to explode.

This is a variable-unit, advanced, hands-on course. The course will start with lecture style covering of the evolutionary foundations of cloud computing and then focus on the emerging IoT specifications, infrastructures and security technologies to build IoT devices, covering the still evolving state-of-the-art practices, tools, languages, protocols, infrastructures used for building IoT solutions. Guest speakers from industry and academia will cover various topics and technologies in the field.

Additional focus will be placed on security and authentication and internet of things related topics.

Each student will work on a research paper or project and will receive 4-6 units based on the extent of work.

Instructor(s):

Murat Karaorman

Days and Times:

Tuesdays and Thursdays, 6:00pm-7:50pm

Rooms:

Spring 2017 Course Offerings

Bldg 494, Room 143

Comparative (Machine) Language Morphology

COMPUTING CS 130E, Section 2

EC# 71175

Too many programmers spend their time working with a single programming language: they find it difficult to switch between programming languages, they find it takes a while to learn a new programming language, and they look down on solutions that might involve working with multiple programming languages at the same time. The goal of this course is to give students familiarity with a number of programming languages: each language will be quickly demonstrated (languages will not be covered in depth), and a few key defining features will be analyzed in detail (the things that really make that language different or unique). The goal is that by the end of the course new languages can be picked up quickly because their features will feel "familiar" to one of the many existing languages that they have already seen.

Initial (Conceptual) Structure:

Basics: Recipes, Lisp, Scheme
Parsing: LL, LR, LALR, GLR
Structure: Python, Visual Basic
Machines: C, C++98, FORTRAN
Objects: Smalltalk, Objective-C
Business: Java, JavaScript
Perspective: Algol68, Go
Types: OCaml, Scala, Swift
Laziness: Haskell, Clojure
Microsoft: C#, F#, MC++, VB.NET
Layers: CoffeeScript, TypeScript
Search: SQL, RegEx, XPath
Strange: GNU Make, XSL/T, C++11
Unix: awk, sed, sh, find
Scripting: Perl, Ruby, PHP
Embedding: TCL, Lua, Guile
Declarative: Prolog, Erlang
Science: Mathematica, R, MATLAB

Instructor(s):

Omer Egecioglu

Jay Freeman

Days and Times:

Wednesday, 6:00pm - 9:30pm

Spring 2017 Course Offerings

Rooms:

Bldg. 494, Room 143

INTRODUCTION TO QUANTUM COMPUTING

COMPUTING CS 130G, Section 1

EC# 08649

In this advanced topics course we will look at the theory of quantum computation, from a computer science perspective. Topics that we will cover are: elementary quantum mechanics, quantum bits, quantum information, quantum gates and circuits, quantum algorithms, teleportation, quantum cryptography, Shor's quantum algorithm for factoring integers and discrete logarithms, Grover's quantum searching algorithm, lower bounds in quantum computation. Time permitting we will also look into small experiments that implement some of these ideas.

Instructor(s):

Wim van Dam

Days and Times:

Thursdays, 1:00pm-2:20pm

Rooms:

Bldg 494, Room 143

Optional Textbooks:

Aaronson, Scott *Quantum Computing Since Democritus* Cambridge University Press

ADVANCED LINEAR ALGEBRA II

MATHEMATICS CS 108B, Section 1

EC# 30635

This is a first-year course which is part of a sequence of two consecutive courses. In this course, we will cover the following topics in Linear Algebra: Determinants, eigenvalues, eigenvectors, and diagonalization, canonical forms, and inner product and norm, Gram-Schmidt process. If time permits, we will also cover topics among the following: adjoint of a linear operator, normal and self-adjoint operators, unitary and orthogonal operators, spectral theorem. The language and concepts of matrix theory and, more generally, of linear algebra have come into widespread usage in the social and natural sciences, computer science, and statistics. In addition, linear algebra continues to be of great importance in modern treatments of geometry and analysis.

Instructor(s):

Maria Isabel Bueno Cachadina

Days and Times:

Mondays, Wednesdays, Thursdays, Fridays, 1:00pm-2:50pm

Rooms:

Bldg 494, Room 164B

Spring 2017 Course Offerings

SELECTED TOPICS IN DISCRETE MATHEMATICS III

MATHEMATICS CS 120, Section 1

EC# 30643

Topics in game theory, from combinatorial games through to classical game theory.

Instructor(s):

Karel Casteels

Days and Times:

Tuesdays and Thursdays, 3:00pm-4:20pm

Rooms:

Bldg 494, Room 164B

Required Textbooks:

DeVos, Matt and Kent, Deborah A. *Game Theory: A Playful Introduction* American Mathematical Society

Spring 2017 Course Offerings

PROBABILITY

MATHEMATICS CS 121, Section 1

EC# 30692

This is an introductory course on Probability Theory, with an emphasis on combinatorics. We will cover the basic formalisms of probability, discrete and continuous distributions, generating functions, conditioning, Law of Large Numbers, Large Deviation, and Central Limit Theorem. Applications to Biology, Computer Science, Engineering, and Physics will be discussed.

Instructor(s):

Tomoyuki Ichiba

Days and Times:

Mondays and Wednesdays, 9:30am-10:50am

Rooms:

Bldg 494, Room 164B

Optional Textbooks:

Pitman, Jim *Probability (Springer Texts in Statistics)* Springer

INTRODUCTION TO THEORY OF COMPLEX VARIABLES

MATHEMATICS CS 122B, Section 1

EC# 30700

This is the second of a two-quarter introductory course on complex analysis. We will continue our exploration of the analytic and geometric sides of the subject, balancing theory and computation. Topics will include power series, Laurent series, classification of singularities, residue theorem, the general homological form of Cauchy's theorem and integral formula, argument principle, Rouché's theorem, Riemann mapping theorem, analytic continuation, Riemann surfaces, etc.

Instructor(s):

Thomas Sideris

Days and Times:

Tuesdays and Thursdays, 11:00am - 12:20pm

Rooms:

Bldg 494, Room 164B

Optional Textbooks:

Marsden, J. and Hoffman, M. *Basic Complex Analysis* W. H. Freeman

Spring 2017 Course Offerings

INDIVIDUAL INSTRUCTION IN MUSIC COMPOSITION

MUSIC CS 101, Section 1

EC# 35246

One on one instruction in music composition, with an emphasis on music in the notated tradition. Students should come by Old Little Theater 154B to sign up for a weekly lesson time prior to the first day of classes.

Instructor(s):

Leslie Hogan

Days and Times:

TBA

Rooms:

Bldg. 494, Room 154B

Spring 2017 Course Offerings

CCS COMPOSITION TUTORIAL

MUSIC CS 101, Section 2

EC# 35253

Private tutorial instruction in Composition, centered around the original work majors complete towards exit portfolios, recitals and juries. Principally for CCS Music Composition majors. The course is considered upper-division (junior level).

Prerequisites:

This is not a beginning course in composition; it is a majors course. It is open to all CCS entering freshmen; others must demonstrate work already done to an upper-division level. See the Music Department for lower division courses you can take in music composition.

Instructor(s):

Jeremy Haladyna

Days and Times:

TBA

Rooms:

MUSIC 0313

POSTMODERNISM IN MUSIC: SCANNING THE HERE AND NOW

MUSIC CS 105, Section 1

EC# 35386

In this "proactive seminar" course, Jeremy Haladyna challenges each participant to grapple with what's sounding today in concert music across the globe. Here it is still not a question of music packaged for and disseminated only on mass channels, though part of the course will involve determining to what extent that situation is now changing. Starting with the repertory of the major world concert venues and "art-music" festivals, we will attempt to identify as many distinct vectors within postmodernism as we can.

Which vectors can trace their ancestry clear back to the middle '60s when the too-tight modernist snakeskin in art music began to be shed?

Which vectors have arisen only in recent decades? How do composers such as the UK's Steve Martland or America's John Adams seem to align philosophically with the movement? Do prominent Asian and expatriate Asian composers such as Chen Yi and Tan Dun seem to fit? Does the postmodernist movement fly in the face of continuing technological development in music, or can we posit some degree of congruence?

There's clearly a lot to think about, and for the composers in the class, "it's your here and now." THIS COURSE IS OPEN TO ALL CCS/L&S MUSIC MAJORS first and then to ALL OTHER MAJORS on a space-available basis. There will be student listening and internet assignments, selected library reserve articles on postmodernism and a final project in which students will elect either to author a position paper (with citations) or a postmodernist musical composition, along certain guidelines.

Instructor(s):

Jeremy Haladyna

Days and Times:

Mondays and Wednesdays, 12:00pm-1:20pm

Rooms:

Bldg 494, Room 154

Required Textbooks:

Gloag, Kenneth *Postmodernism in Music* Cambridge Univ. Press

Spring 2017 Course Offerings

RHYTHM OF THE NEWS, PART 2

MUSIC CS 105, Section 2

EC# 35394

In Part 2 of MUS CS 105: Rhythm of the News, College of Creative Studies music composition majors will realize their reactions to their selected news stories, creating a performance of their choice, using actors, performance art, dance, constructed video, etc., to accompany their music created in Part 1. The culmination of this course will result in the final projects being filmed using multi-camera and green screen possibilities in Kerr Hall Studio A.

Must have taken MUS CS 105: Rhythm of the News, Part 1

Instructor(s):

Gerry Hansen

Days and Times:

Tuesdays and Thursdays, 7:00pm-8:50pm

Rooms:

Bldg 494, OLT

Spring 2017 Course Offerings

SOFTWARE OPEN FORUM

MUSIC CS 105, Section 3

EC# 35402

In this course, students are encouraged to write their own music software in the language Python, getting guidance from more experienced students and/or offering advice to the less experienced.

Instructor(s):

Clarence Barlow

Days and Times:

Wednesdays, 4:00pm-6:00pm

Rooms:

Music Bldg, Room 1129

EMBODIED SONIC MEDITATION: A CREATIVE SOUND EDUCATION

MUSIC CS 105, Section 4

EC# 35410

What is the difference between hearing and listening? What are the connections between our listening, bodily activities, and the lucid mind? This interdisciplinary course on acoustic ecology, sound art, and music technology will give you the answers. Through deep listening (Pauline Oliveros), compassionate listening (Thich Nhat Hanh), soundwalking (Westerkamp), and interactive music controlled by motion capture, the unifying theme of this course is an engagement with sonic awareness, environment, and self-exploration. Particularly we will look into how we generate, interpret and interact with sound; and how imbalances in the soundscape may have adverse effects on our perceptions and the nature. These practices are combined with readings and multimedia demonstrations from sound theory, audio engineering, to aesthetics and philosophy. Students will engage in hands-on audio recording and mixing, human-computer interaction (HCI), group improvisation, environmental film streaming, and soundscape field trip. These experiences lead to a final project in computer-assisted music composition and creative live performance. By the end of the course, students will be able to use computer software to create sound, design their own musical instruments, as well as connect with themselves, others and the world around them in an authentic level through musical expressions.

Instructor(s):

Jiayue Cecilia Wu

Days and Times:

Mondays and Wednesdays, 1:30pm-2:50pm

Rooms:

Bldg 494, Room 143

Spring 2017 Course Offerings

EXPERIMENTAL PHYSICS

PHYSICS CS 15C, Section 1

EC# 38182

Sign up for one lab section or the other (Wednesday OR Friday - NOT BOTH!)

This is the third quarter of a year-long class designed to help you learn to do experimental physics research. The third quarter will focus on the design and construction of scientific apparatus.

You will learn about materials, fasteners, and basic principles of mechanical design. You will have the opportunity to use a 3-D CAD (Computer Aided Design) program that will let you build parts in three dimensions and then obtain the requisite machine drawings from whichever views you choose.

To put all this new knowledge to work, the class will design and build specialized research instruments and lecture demonstration equipment for use on campus.

Prerequisites: Phys CS 15A and Phys CS 15B.

A lab fee will be assessed to your BARC account.

Instructor(s):

Georgios Koutroulakis

Days and Times:

Wednesday, 2:00pm - 2:50pm; Wednesday, 3:00pm - 5:50pm

Rooms:

BRDA 6334

Spring 2017 Course Offerings

EXPERIMENTAL PHYSICS

PHYSICS CS 15C, Section 2

EC# 38190

Sign up for one lab section or the other (Wednesday OR Friday - NOT BOTH!)

This is the third quarter of a year-long class designed to help you learn to do experimental physics research. The third quarter will focus on the design and construction of scientific apparatus.

You will learn about materials, fasteners, and basic principles of mechanical design. You will have the opportunity to use a 3-D CAD (Computer Aided Design) program that will let you build parts in three dimensions and then obtain the requisite machine drawings from whichever views you choose.

To put all this new knowledge to work, the class will design and build specialized research instruments and lecture demonstration equipment for use on campus.

Prerequisites: Phys CS 15A and Phys CS 15B.

A lab fee will be assessed to your BARC account.

Instructor(s):

Georgios Koutroulakis

Days and Times:

Wednesday, 2:00pm - 2:50pm; Friday, 3:00pm - 5:50pm

Rooms:

BRDA 6334

Spring 2017 Course Offerings

WAVES, KINETIC THEORY, AND RELATIVITY

PHYSICS CS 33, Section 1

EC# 38216

Sound waves. Fluid dynamics. Kinetic theory of matter. The Maxwell-Boltzmann distribution. Specific heat. The special theory of relativity.

Note: All enrolled must attend both the lecture and one weekly assigned problem session.

This course is required for CCS Physics freshmen.

Prerequisite: Physics CS 32 and vector calculus, or equivalent. Class is closed to ONLY CCS PHYSICS FRESHMEN.

Instructor(s):

Sathya Guruswamy

Brian Youngblood

Days and Times:

Tuesday and Thursday, 3:30pm - 4:50pm; Wednesday 1:00pm - 2:50pm;

Wednesday 3:00pm - 4:50pm

Rooms:

Bldg. 387, Room 104

Required Textbooks:

Ohanian, *Modern Physics, 2nd edition* Benjamin Cummings

Spring 2017 Course Offerings

QUANTUM PHYSICS

PHYSICS CS 36, Section 1

EC# 38224

Wave-particle duality. Photons. Matter waves. The uncertainty principle. The Schroedinger equation. Potential wells and barriers. The quantized simple harmonic oscillator. The hydrogen atom.

Prerequisites: Physics CS 34 and 35 or equivalent

Instructor(s):

Tengiz Bibilashvili

Brian Youngblood

Days and Times:

Tuesday and Thursday, 3:30pm - 4:50pm; Thursday 11:00am - 12:50pm; Thursday, 1:00pm - 2:50pm

Rooms:

PHELP 1440

Required Textbooks:

John R. Taylor, Chris D. Zafiratos, Michael A. Dubson *Modern Physics for Scientists and Engineers* University Science Books

Feynman, Leighton, Sands, *Feynman Lectures on Physics Vol. III The New Millennium Edition: Quantum Mechanics* Basic Books

Spring 2017 Course Offerings

PHYSICS COLLOQUIUM

PHYSICS CS 140, Section 1

EC# 38232

Students will learn how to read about advanced topics of Physics, from books and scientific articles. In some cases they will state and solve problems related to their topic. Most of class time will be based on the students' presentations and communication.

Instructor(s):

Tengiz Bibilashvili

Days and Times:

Friday, 1:00pm - 2:50pm

Rooms:

NH 1109

Spring 2017 Course Offerings

First-Years Writing Workshop Colloquium

WRITING & LITERATURE CS 5, Section 1

EC# 71167

This class is intended for students within the new Writing & Literature major for the College of Creative Studies. While the students have taken classes with each other previously, they have not had a chance to learn to critique each other's works, and this course will work to remedy that. The goal for the end of this course will have two parts. One will be for the students to become comfortable with each other, knowing that they can trust each other with their writing. The second part will focus on learning how to critique, and the different techniques that students can use to do so. One unit will be earned for coming to at least 8 classes, and the second will be earned for sharing one's work and offering real constructive criticism to others who share their work. Because this group of people will be together for the next few years, this is an opportunity for the major to create a safe space within each other.

Student Leader: Komal Surani

Instructor(s):

Kara Mae Brown

Days and Times:

Monday, 8:00pm - 9:20pm

Rooms:

Bldg. 494, Room 143

Spring 2017 Course Offerings

INTRODUCTION TO WRITING STUDIES

WRITING AND LITERATURE CS 20, Section 1

EC# 54866

Provides an introduction to the intellectual orientation, practices, and epistemologies of Writing Studies.

Instructor(s):

Kara Mae Brown

Days and Times:

Mondays, 5:30pm-8:00pm

Rooms:

Bldg 494, Room 143

Required Textbooks:

Adler-Kassner, Linda and Wardle, Elizabeth *Naming What We Know: Classroom Edition-Threshold Concepts of Writing Studies* Utah State University Press

Spring 2017 Course Offerings

POETRY WORKSHOP

WRITING AND LITERATURE CS 110, Section 1

EC# 54874

In the main, this course is a workshop, meaning you'll present your own poetry to the class for careful discussion. You'll also read widely. Lu Chi in his famous *Ars Poetica* says, "When cutting an axe handle with an axe, surely the model is at hand." Heeding this wisdom we will use the poems in our books as our axe handles, our models to emulate. You'll turn in a portfolio of 12 poems at the quarter's end.

Instructor(s):

Teddy Macker

Days and Times:

Tuesdays and Thursdays, 2:30pm-4:20pm

Rooms:

Bldg 494, Room 160B

Required Textbooks:

Bass, Ellen *Mules of Love* BOA

Hirshfield Jane *Given Sugar, Given Salt* Harper Perennial

Milosz Czeslaw *A Book of Luminous Things* Mariner Books

Spring 2017 Course Offerings

SCREENWRITING: FROM STORY TO SCREENPLAY TO SHORT FILM

WRITING AND LITERATURE CS 141, Section 1

EC# 54882

In this course we'll start with the raw material of a short story/vignette/memoir/documentary, workshop it, then adapt it for screenplay format then we'll shoot it as a short using iPhone or similar technology for class project. Obviously, we'll reinvent the wheel to great effect.

<http://iphonefilmmaker.com/watch/>

Instructor(s):

Jervey Tervalon

Days and Times:

Fridays, 11:30am-1:50pm

Rooms:

Bldg 494, Room 143

ELENA FERRANTE: THE NEAPOLITAN QUARTET

WRITING AND LITERATURE CS 151EF, Section 1

EC# 54890

Elena Ferrante considers the four volumes of the Neapolitan Quartet to be one long novel. The main characters are two women, Lena and Lila, who meet when they're six years old, both living in a violent and misogynistic working-class neighborhood of Naples in the 1950s. The book begins with the disappearance, in her sixties, of one of the women, and the narrator's attempt to capture the life, through writing, of her friend who has disappeared. Ferrante's books are famously female driven, and about driven females, women who struggle with their own womanhood, with how to be a mother and a daughter, a wife and a friend, and also find meaningful and satisfying work. Some admirers have described the writing's "radical emotional intensity" as a kind of feminine writing-- fierce, unsentimental, honest, and full of feeling. What's made the Neapolitan Quartet a must read for anybody who loves a good novel is not just the great writing, but the plots. These are exciting page-turners, full of surprises.

A tangential aspect of the novels is that "Elena Ferrante" is a pseudonym and little is known about the actual author, though recently an Italian journalist claims to have discovered her identity. The person who goes by the name "Elena Ferrante" has interesting things to say about why she chooses to remain unknown, outside of the public eye. We'll talk about that too.

"Elena Ferrante will blow you away." -- Alice Sebold

"Nothing quite like this has ever been published before." The Guardian

"The Neapolitan novels move far from contrivance, logic, or respectability to ask uncomfortable questions about how we live, how we love, how we sing an existence in a deeply flawed world that expects pretty acquiescence from its women. In all their beauty, their ugliness, their devotion and deceit, these girls enchant and repulse, like life, like our very selves." The Sydney Morning Herald

Instructor(s):

Caroline Allen

Days and Times:

Tuesdays and Thursdays, 1:00pm-2:20pm

Rooms:

Bldg 494, Room 160B

Required Textbooks:

Ferrante, Elena *My Brilliant Friend* Europa

Ferrante, Elena *The Story of a New Name* Europa

Ferrante, Elena *Those Who Leave and Those Who Stay* Europa

Ferrante, Elena *The Story of the Lost Child* Europa

Optional Textbooks:

Spring 2017 Course Offerings

Ferrante, Elena *Frantumaglia*

BLOGS, PODCASTS, AND VIDEO ESSAYS: MEDIA CRITICISM FOR THE DIGITAL AGE

WRITING AND LITERATURE CS 161NM, Section 1

EC# 68312

"Everyone's a critic," the saying goes. The growth of user-friendly online publishing venues has made this all the more true. This course tackles how to write effectively and persuasively about popular media in the digital era. It teaches the basics of media critique and introduces students to audio and video editing tools to create multimedia criticism. We will read and analyze notable criticism pieces on contemporary music, film, and television; write short blog reviews on the media of students' choice; and create a digital version of a review in the form of a podcast or video essay. Having access to a laptop is preferable but should not prohibit students from joining this class.

Instructor(s):

Juan Llamas Rodriguez

Days and Times:

Mondays and Wednesdays, 1:00pm-2:20pm

Rooms:

Bldg 494, Room 160B

Required Textbooks:

Corrigan, Timothy *A Short Guide to Writing about Film* Pearson

Keathley, Christian and Mittell, Jason *The Videographic Essay: Criticism in Sound and Image* Caboose Books (this will not be available from the UCSB Bookstore, but is available from Amazon: ISBN 9781927852040)