## College of Creative Studies Fall 2015 Course Offerings

#### ART CS 105, 1

#### **Beginning and Intermediate Letterpress Printing**

The basics of letterpress printing will be covered, giving emphasis to traditional and experimental methods for using handset metal and wooden type. Additional print options, such as photopolymer plate and type-high relief methods, will be presented.

The course will emphasize both the technical and aesthetic aspects of letterpress printing. This will include setting type and printing using the letterpress. Importance will be given to the text and image page as a two-dimensional art form. Students will create a limited edition artists' book, in which the 2 dimensional page is activated in the 3 dimensional book form.

Intermediate and advanced students are welcome.

#### **Required Text:**

Lupton, Ellen Thinking with Type, 2nd revised and expanded edition: A Critical Guide for Designers, Writers, Editors, & Students ISBN-10: 1568989695

Students

Princeton Architectural Press, 2010

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

| Instructor: | Linda Ekstrom                    |
|-------------|----------------------------------|
| Time:       | Wednesday, 1:00pm – 4:50pm       |
|             | Thursday, 6:00pm - 7:50pm (Lab)  |
| Place:      | Bldg. 494, Room 107 (Print Room) |

## Fall 2015 Course Offerings **ART CS 15, 1**

#### 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 new CCS Art Majors who are entering UCSB as freshmen or transferring into CCS in the fall quarter.

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 afternoon.

**You must also attend Intro to Contemporary Art (Art St 1C)**. It is offered though Department of Art. It is a symposium style course that features visiting artists each week who lecture on their work. **It is required for all CCS incoming freshmen and CCS transfer art majors.** You may also take it again in subsequent quarters.

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. (CCS Art Course)\*\*

## \*\*Enroll in Intro to Contemporary Art (Art St 1C) for 2.0 units with Letter Grade. (Department of Art Course)\*\*

<u>Required Text:</u> Holzwarth, H.W.

Art Now! - Volume 4, 2013

Taschen

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

# Fall 2015 Course Offerings **ART CS 102, 1**

#### EC# 01552

#### **Materials and Practices of Painting**

This class is a thorough treatment of facts every painter should know about materials and craft. There will be a presentation by the instructor at each meeting and students will paint in class as well. There will also be a written examination at the end of the quarter, successful completion of which will account for two of the four units offered for this class.

In addition to attending the presentations and passing the exam, to earn four units in this class you must also complete two paintings as assigned by the instructor.

You must be a CCS Art major or an L&S Art major to take this class.

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

Instructor:Dan ConnallyTime:Tuesday and Thursday, 12:30pm - 2:20pmPlace:Bldg. 494, Room 136

## Fall 2015 Course Offerings **ART CS 112, 1**

#### **Personal Narrative**

Intensive writing-based workshop designed for formulating and producing artwork based on one's own personal experiences and histories. Experimentation and expansion into other artistic media are encouraged.

Upper division standing only.

This class is cross listed with ART 136.

| Instructor: | Kip Fulbeck                    |
|-------------|--------------------------------|
| Time:       | Monday & Wednesday 1:00-3:50pm |
| Place:      | Arts Bldg, Room 1344           |

## Fall 2015 Course Offerings ART CS 112, 2

#### **Independent Projects**

Students will provide, for approval by the instructor, a description of the work they plan to undertake in any medium during the quarter. Individual meetings and group meeting will alternate weekly.

\*\*CCS Art majors only. L&S Art majors at senior or junior level may enroll with consent of the instructor.\*\*

<u>Optional Texts:</u> As recommended on an individual basis by the instructor.

| Instructor: | Dan Connally             |
|-------------|--------------------------|
| Time:       | Tuesday, 4:30pm – 5:50pm |
| Place:      | Bldg. 494, Room 120      |

## Fall 2015 Course Offerings **ART CS 120, 1**

#### **Intermediate Sculpture**

We will pursue individual directions in making art with an emphasis on creating public works.

This course is cross-listed with Art Department 105PP, Intermediate Sculpture in Public Practice.

**Prerequisites:** This course is open to students who have taken either Sculpture 12 or 7C in the Art Department or an equivalent.

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

| Instructor: | Jane Mulfinger                       |
|-------------|--------------------------------------|
| Time:       | Monday & Wednesday, 9:00am – 11:50am |
| Place:      | Arts Bldg., Room 0641                |

#### BIOLOGY CS 10, 1

#### **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.

| Instructor: | Claudia Tyler, Armand Kuris, and Bruce Tiffney |
|-------------|--|
| Time:       | Wednesday, 3:00 pm - 4:50 pm                   |
| Place:      | Bldg. 494, Room 136                            |

#### **BIOLOGY CS 12, 1**

#### **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 literature. The course will meet once per week for one hour.

**Prerequisites:** Concurrent enrollment in MCDB 1A.

Instructor:Stuart FeinsteinTime:Thursday, 8:00am - 8:50amPlace:Bldg. 494, Room 143

#### **BIOLOGY CS 101, 1**

#### Ecology of Food

The choices we make as a society about the food we eat affects both the species being consumed and its ecosystem (and us, too, of course!). In this seminar-style course we will consider our food, acquired on land and from the sea, and discuss the natural history and ecology of our "prey" and its relationship with us.

We will start "on land", reading "The Omivore's Dilemma" by Michael Pollan, discussing food species acquired through the industrial and organic agriculture, and the hunter-gatherer approach. In the second half of the course we will go "to the sea", reading "Four Fish" by Paul Greenberg to guide our study of the impact of history, geography and consumption on the wild stocks of salmon, seabass, cod, and tuna. Readings will be supplemented by research and popular articles, and additional book chapters.

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 Texts:**

Greenberg, P. *Four Fish: The Future of the Last Wild Food* Penguin Group, Inc. New York, NY, 2010 ISBN: 1-101-43829-0

Pollan, M. *The Omnivore's Dilemma: A Natural History of Four Meals* Penguin Group, Inc. NY, NY, 2006 ISBN: 1-59420-082-3

Instructor:Claudia TylerTime:Tuesday, 11:00am - 12:20pmPlace:Bldg. 494, Room 136

#### **COMPUTING CS 1A, 1**

Place:

#### EC# 58305

#### **Computer Programming and Organization**

\*\*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 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 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.

| Instructor:<br>Time:                                       | Phill Conrad<br>Tuesday and Thursday, 10:00am – 11:50am           |         |
|--|---|---------|
| Main, M. and Savich,<br>ISBN: 97801321294                  | W. Data Structures and Other Objects Using C++, 4th Edition<br>30 | Pearson |
| <u>Required Texts:</u><br>Savitch, W.<br>ISBN: 97801335917 | Problem Solving with C++, 9th Edition<br>43                       | Pearson |

**Bldg. 494, Room 143** 

#### **COMPUTING CS 1L, 1**

#### **Programming Lab**

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

Instructor:Murat KaraormanTime:Monday and Wednesday, 6:00pm - 8:20pmPlace:Bldg. 494, Room 143

#### **COMPUTING CS 2, 1**

#### EC# 58347

#### **Foundations of Computer Science**

Discrete mathematics foundations of computer science: Introduction to propositional and predicate logic, set theory, functions and relations, mathematical induction and recursion, and an introduction to combinatorics.

The essence of this course is to develop mathematical problem-solving skills that you can apply in a variety of intellectual pursuits.

**Prerequisites:** The mathematical maturity obtained from a high school mathematics curriculum that is sufficient for admission to CCS computer science, mathematics, or physics. Some programming experience is helpful.

| <u>Required Texts:</u> |   |                    |
|------------------------|---|--------------------|
| Rosen, K.H.            | Discrete Mathematics and Its Applications, newest Edition | McGraw-Hill        |
| <b>Optional Texts:</b> |   |                    |
| Tucker, A.             | Applied Combinatorics                                     | John Wiley         |
| Burger, E.B. and Star  | bird, M. The 5 Elements of Effective Thinking Princeton   | n University Press |

| Instructor: | Peter Capello                           |
|-------------|---|
| Time:       | Monday and Wednesday, 10:00am – 11:50am |
| Place:      | Bldg. 494, Room 143                     |

#### LITERATURE CS 101, 1

#### **Axe Handles: Reading Poetry to Write Poetry**

In the main, this course is a workshop, meaning you'll present your own poetry to the class to receive careful attention. 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 approach 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.

#### **Required Texts:**

| Kaminsky, I.<br>978-0061583247 | The Ecco Anthology of International Poetry 1st edition                        | ECCO          |
|--------------------------------|---|---------------|
| Milosz, C.<br>978-0156005746   | A Book of Luminous Things, Reprint edition                                    | Mariner Books |
| Instructor:<br>Time:<br>Place: | Teddy Macker<br>Monday and Wednesday, 2:00pm – 3:20pm<br>Bldg. 494, Room 160B |               |

#### LITERATURE CS 102, 1

#### Screenwriting: From Story to Screenplay to Short Film

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/

#### No text required.

| Instructor: | Jervey Tervalon            |
|-------------|----------------------------|
| Time:       | Thursday, 11:30am – 2:20pm |
| Place:      | Bldg. 494, Room 160B       |

#### LITERATURE CS 105, 1

#### EC# 29082

#### Literature Symposium

Every quarter various poets, novelists, short story writers, journalists, playwrights, cartoonists, editors, publishers, filmmakers, and critics will present their work at the weekly CCS Literature Symposium. Students who attend all 10 meetings will receive 1 unit of college credit. If you miss the first day of symposium on Wednesday, April 1<sup>st</sup>, you must talk to Caroline Allen in order to remain enrolled for credit. The symposium is open to the community. Students who are not enrolled in the class are welcome to come to symposia that interest them.

Important Etiquette: Students should be in the Old Little Theatre no later than 4 o'clock. Students should sit in the first half of the seating area—no back row sleepers or doers of crossword puzzles! Do not leave before the end of the symposium. Our readers come here to give you the best of themselves. Please be courteous and attentive.

If you need special assistance due to a disability, please call 893-2364.

| Instructor: | Caroline Allen               |
|-------------|------------------------------|
| Time:       | Wednesday, 4:00 pm – 5:15 pm |
| Place:      | The Old Little Theater       |

#### LITERATURE CS 110, 1

#### **Ernest Hemingway**

We'll read the major works of Ernest Hemingway with an eye to technique and social context and his lasting influence. We'll examine issues of race, gender, anti-Semitism and masculine mythology. Hemingway might be perceived, rightfully so, as racist, homophobic and sexist, but you can learn much from him as a major artist and as a flawed individual.

#### **Required Texts:**

Finca Vigia Ed. – 1987 The Complete Short Stories of Ernest Hemingway 1<sup>st</sup>. Ed. Charles Scribner's Sons ASIN: B000TQGUL8

Hemingway, E. *Four Novels: The Sun Also Rises; A Farewell to Arms; Barnes & Noble 2nd Printing* For Whom the Bell Tolls: The Old Man and the Sea edition (2007) ISBN-10: 0760796629 ISBN-13: 978-0760796627

Hemingway, E., Hemingway, H. A Moveable Feast: The Restored Edition Paperback Scribner; Reprint HEMINGWAY. P. edition (July 20, 2010) ISBN-10: 143918271X ISBN-13: 978-1439182710 Simon and Schuster Digital Sales Inc Digital Edition: ASIN: B002F08230

**Instructor: Jervey Tervalon** Thursday, 2:30pm - 5:20pm Time: **Bldg. 494, Room 160B** Place:

#### LITERATURE CS 114, 1

#### **Coming of Age: Stories about Children and Young Adults**

A course in reading and writing about how we humans grow from a state of innocence to experience. We'll also look at the roles of parents, friends. lovers, education, and meaningful work in the formation of character.

| <u>Required Texts:</u><br>O'Neil, H.<br>ISBN: 9780060875077 | Lullabies for Little Criminals      | Harper                  |
|---|-------------------------------------|-------------------------|
| Harbach, C.<br>ISBN: 9780316126670                          | The Art of Fielding                 | Back Bay Books          |
| Adichie, C.N.<br>ISBN: 0307455920                           | Americanuh                          | Anchor                  |
| Bechdel, A.<br>ISBN: 0618871713                             | Fun Home: A Family Tragicomic       | Mariner Books           |
| Barry, L.<br>ISBN: 1570612609                               | The Greatest Marlys                 | Sasquatch Books         |
| Hemingway, E.<br>iSBN: 0020518102                           | In Our Time                         | MacMillan               |
| Lawrence, D.H.<br>ISBN: 1853260479                          | Sons and Lovers, Wordsworth Edition | Wordsworth Editions Ltd |

\*\*Please Read the first 100 pages of The Greatest Marlys by Lynda Barry for the first day of class.\*\*

| Instructor: | Caroline Allen                           |
|-------------|--|
| Time:       | Monday and Wednesday, 12:30 pm – 1:50 pm |
| Place:      | Bldg. 494, Rm. 160B                      |

#### **MATHEMATICS CS 101A, 1**

#### **Problem-Solving Seminar**

This is a course on mathematical problem-solving methods and techniques. Throughout the quarter, we will examine a number of problem-solving techniques (e.g. symmetries, invariants, coloring arguments, parity, recursive arguments, isomorphisms, inclusion-exclusion, etc) and how they can be used to solve various kinds of mathematical problems.

Because the best way to learn these techniques is to work with them, this course will be heavily centered around student work and problem-solving. In particular, there will be relatively few ``standard'' lectures in this class, as most if not all class periods will be dominated by student presentations and collaboration.

Instructor:Maribel BuenoTime:Monday and Wednesday, 3:30pm - 5:20pmPlace:Bldg. 494, Room 164B

#### **MATHEMATICS CS 120, 1**

#### **Topics in Discrete Mathematics**

This course will explore a number of topics in discrete mathematics; some topics may include design theory, error-correcting codes, geometry, finite fields, enumerative combinatorics, inclusion-exclusion, graph theory, and set theory. The specific subjects covered will vary depending on student interests and aptitudes.

| Instructor: | ТВА                                   |
|-------------|---------------------------------------|
| Time:       | Tuesday and Thursday, 3:30pm - 4:50pm |
| Place:      | Bldg. 494, Room 164B                  |

#### **MATHEMATICS CS 128, 1**

#### **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 CachadinaTime:Monday, Wednesday, and Thursday, 11:00am - 12:50pmPlace:Bldg. 494, Room 164B

#### MATHEMATICS CS 130B, 1

#### **Multidimensional Analysis**

A modern treatment of integration.

#### **Required Texts:**

| Edwards Jr, C. H.   | Advanced Calculus of Several Variables | Dover Paperback |
|---------------------|--|-----------------|
| ISBN-10: 0486683362 |  |                 |

Instructor:John Douglas MooreTime:Monday, Wednesday & Friday 1:00pm - 1:50pmPlace:Bldg. 494, Room 143

#### **MUSIC COMPOSITION CS 101, 1**

#### **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:       | ТВА                      |
| Place:      | Music Building, Rm. 0313 |

#### **MUSIC COMPOSITION CS 101, 2**

#### **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 lesson time prior to the first day of classes.

Information: leslie.hogan@ccs.ucsb.edu

**Prerequisites:** Priority given to CCS Music Composition Majors. All others require the permission of the instructor to enroll \*\*prior to registration.\*\*

Instructor:Leslie HoganTime:To Be Arranged (Music Only)Place:Bldg. 494, Room 154

#### **MUSIC COMPOSITION CS 102, 1**

#### Rhythm

Rhythm in its broadest sense is the way sound is organized over time--and considering that music is a time based art form, a thorough understanding of rhythm and how it functions in various contexts is essential for the composer. We'll look at rhythm in metrical and non-metrical contexts; additive and divisive rhythms. We'll examine (and master) all kinds of ways of notating rhythm so that it can be understood by the performer. We'll study works that are all rhythm and no pitch, and try our hands set writing our own. It will as comprehensive a study as we can undertake in 10 weeks

**Prerequisites:** Priority given to CCS Music Composition Majors. All others require the permission of the instructor to enroll \*\*prior to registration.\*\*

Instructor:Leslie HoganTime:Tuesday and Thursday, 12:30pm - 1:50pmPlace:Bldg. 494, Room 154

#### **MUSIC COMPOSITION CS 105, 1**

#### **A-Sharp Nexus**

The composer and music meet the other arts, sciences and religion.

Special note to CCS Music Composition majors: this is the only course taught by Haladyna counting towards the CCS music history requirement.

In this course, open to all CCS students (and others, space permitting) the composer is at the center of historical action. Jeremy Haladyna posits the thesis that "no composer is an island...(well, almost none)."

No, we wouldn't think of crowding out a few essential "hermit-types." Yet, in the main: composers are world-citizens who must think and act in concert with an evolving world. And we have always done better than to cast lonely notes adrift on the airwaves in bottles.

If you have ever felt, as a musician or as a lover-of-music, disconnected to the world at large, you'll have a ready-formed interest in the subject of this course. It may even help composers relate better to their University environment right here and now at UCSB and to discover new interests in other fields.

How did composers react when the church--in the full-flower of the Renaissance--decided music was too complicated? Did the Age of Englightenment somehow signal a "more enlightened" music? What are some of the many instances of serious music as "stylized" ritual or dance? Under what conditions does visceral, down-to-earth music

such as that of Kurt Weill arise, and can it equally lay claim to "greatness?" What were the musical responses to Abstract Expressionist and Cubist painting?

We are rendered dizzy today by a technology that whizzes by faster than we can keep up. But how new is this, really? Where are the previous cases of composers reacting to new technology? Of composers jumpstarting a lagging technology to accommodate a creative vision? Have there been earnest attempts in music to inventory celestial bodies, to acknowledge the discovery of new continental land masses, even to celebrate elements in the periodic table?

Bring an open mind and above all a curious mind to this class as we delve considerably beyond 8 bars of 4/4.

<u>Required Textbook</u>: none—instructor provides materials.

Recommended for all CCS music composition majors. Open to other majors in CCS who are interested in the problem of artists in society.

| Instructor: | Jeremy Haladyna                            |
|-------------|--|
| Time:       | Monday, Wednesday & Friday 1:00pm - 1:50pm |
| Place:      | Bldg. 494, Room 154                        |

#### PHYSICS CS 15A, 1

#### **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.

| Place: Wednesd<br>Place: Broida H       | lay, 3:00 pm - 5:50 pm (Lab)<br>all, Rm. 3314          |                          |
|---|--|--------------------------|
| Instructor: David We<br>Time: Wednesd   | David Weld<br>Wednesday, 2:00 pm - 2:50 pm (Lecture)   |                          |
| Williams, J.<br>ISBN-13: 978-0321953308 | Style: The Basics of Clarity and Grace                 | Longman                  |
| Optional Text:                          |  |                          |
| Taylor, J.<br>ISBN-13: 9780935702750    | An Introduction to Error Analysis, 2 <sup>nd</sup> Ed. | University Science Books |
| Required Text:                          |  |                          |

#### PHYSICS CS 15A, 2

#### **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. ISBN 13: 9780935702750 An Introduction to Error Analysis, 2<sup>nd</sup> Ed. University Science Books

| 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, 1

#### **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.\*\*

| <u>Required Texts:</u>              |   |                            |
|-------------------------------------|---|----------------------------|
| Kleppner, D. and Kolenkow, R.       | An Introduction to Mechanics, 2 <sup>nd</sup> Ed. | Cambridge University Press |
| ISBN: 978-0-521-19811-0             |   |                            |
| <u>Optional Texts:</u>              |   |                            |
| Halliday, D., Resnick, R. and Krane | , K.S. Physics, 5 <sup>th</sup> Edition           | John Wiley & Sons          |
| ISBN: 978-0-471-32057-9             |   |                            |
| Feynman, R.P., Leighton, R.B. and   | Sands, M. The Feynman Lectures on Physics         | s, Basic Books             |
| ISBN: 978-0-465-02493-3             | Volume I: Mainly Mechanics, Radi                  | iation, and Heat           |
|                                     | The Millennium Edition                            |                            |
|                                     |   |                            |

| Instructor: | Tengiz Bibilashvili                              |
|-------------|--|
| 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 103 (Lecture)                     |
|             | Bldg. 387 Room 104 (Problem Sessions)            |

EC# 40170

## Fall 2015 Course Offerings **PHYSICS CS 34, 1**

#### EC# 40188

#### 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:Kleppner, D. and Kolenkow, R.An Introduction to Mechanics, 2<sup>nd</sup> Ed.Cambridge University PressISBN: 978-0471401940

Optional Texts:Halliday, D., Resnick, R. and Krane, K.S.Physics, Volume 2, 5th EditionISBN: 978-0-471-32057-9

Feynman, R.P., Leighton, R.B. and Sands, M. The Feynman Lectures on Physics,<br/>ISBN: 978-0-465-02493-3Basic Books<br/>Volume 2: Mainly Electromagnetism and Matter<br/>The Millennium Edition

| Instructor: | Sathya Guruswamy                                 |
|-------------|--|
| 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 104 (Lecture)                     |
|             | Bldg. 387 Room 103 (Problem Sessions)            |

Winter 2016 Course Offerings

### College of Creative Studies Winter 2016 Course Offerings

#### ART CS 15, Section 1

#### EC#01131

#### Surviving as an Artist

This colloquium will attempt to give students an understanding of what an artistic career looks like outside of the studio. It is directed towards young artists who want to sustain an artistic practice after undergraduate school. The class will be structured around weekly guest speakers who will lecture in various fields of expertise. These fields include museums, galleries, grants, finance, and media. The class will finish with an open-ended discussion with the speaker about any questions we have for our futures. These questions can include such topics as, where can I find an artistic community? Should I go to graduate school? Where will my art end up? How can I get it there? In addition to attending lectures, students can expect to do short weekly readings to develop relevant questions for the speaker. The readings will include selections from one assigned text, as well as supplemental readings that students will find for the class and post on an online forum. The class is meant to be an informative and collaborative effort to remove the mysticism of post-collegiate life. Together we will build practical and financial strategies to survive the art world.

There will be a required reader.

Max: 2 Units

Student leader: Alyssa Rogers

Instructor:Hank PitcherTime:Thursday 5:00pm- 6:50pmPlace:BLDG. 494, Room 136

#### ART CS 101, Section 3

EC#01172

#### Painting

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: | Dan Connally           |
|-------------|------------------------|
| Time:       | Monday 1:00pm- 3:50 pm |
| Place:      | BLDG. 494, Room 120    |

#### ART CS 112, Section 1

EC#01370

#### FIELD RESEARCH: Los Angeles Contemporary Art Venues!

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 as 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: linda.ekstrom@arts.ucsb.edu

Tentative dates for travel to LA: on a Friday, Saturday or Sunday depending on class consensus Friday, Saturday or Sunday on the weekend of January 21 Friday, Saturday or Sunday on the weekend of February 6 Friday, Saturday or Sunday on the weekend of February 20 Friday, Saturday or Sunday on the weekend of March 5

CCS students my apply units toward studio, or non-studio art related units depending on the course work option they choose to complete.

Instructor:Linda EkstromTime:Wednesday 6:30pm - 8:20pmPlace:BLDG. 494, Room 136

#### ART CS 120, Section 1

EC#01412

#### **Place-maker**

Museum dioramas, installations in natural landscapes, man-made encampments on the fringes of wild spaces – all of these things present us with feelings of familiarity through their creation of a domesticated space. From childhood forts made of pillows and blankets to lean-to canvas dugouts, the idea of shelter is essential to the human condition. What constitutes a shelter? What elements need to come together to make us feel sheltered? This course will investigate these questions as well as attempt to create variations on the concept of shelter. A trip to the UC Field Station on Santa Cruz Island will provide an ideal context for this investigation. Readings on vernacular building, furniture making, and other related fields will supplement several projects.

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

| Instructor: | Patrick Gilbert                     |
|-------------|-------------------------------------|
| Time:       | Tuesday & Thursday 3:00pm - 4:50pm  |
| Place:      | Arts, Room 0641 ( Sculpture Atrium) |

#### ART CS 101, Section 2

#### EC#01164

#### Life Drawing

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.

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

#### **Optional Texts:**

*The Nude: A Study in Ideal Form* ISBN: 0691017883 (ISBN13: 9780691017884)

| Instructor: | Hank Pitcher            |
|-------------|-------------------------|
| Time:       | Tuesday 9:00am- 12:50pm |
| Place:      | BLDG 494, Room 120      |
# ART CS 101, Section 1

# Life Painting

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:Hank PitcherTime:Wednesday 9:00am- 12:50pmPlace:BLDG. 494, Room 120

# ART CS 102, Section 1

EC#01206

# Seen / Scene from Nature

This class focuses on art making and a relationship to nature in the context of today's environmental and ecological crisis. The class takes a theme based and interdisciplinary approach. We look at drawings by Da Vinci, Galileo, Darwin; landscape painting by Poussin, Turner and Charles Burchfield; the Post-minimalist practice of Robert Smithson, Bas Jan Ader and Ana Mendieta; and installation and site- specific work from Olafur Eliasson, Pierre Huyghe and Francis Alys. Readings include selections from Kant, Wordsworth, Timothy Morton, Marilyn Robinson and Kim Stanley Robinson. There are a series of exercises in various media and an independent final project.

Instructor:Stephanie WashburnTime:Monday 5:30pm- 7:50pmPlace:BLDG. 494, Room 136

# **BIOLOGY CS 20, Section 1**

EC# 02758

# **INTRODUCTORY BIOLOGY: EVOLUTION & DIVERSITY**

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..

Prerequisites : CCS Biology major

### **Required Texts:**

Hillis, S, Berenbaum, HLife: The Science of BiologyISBN-13: 978-1429298643 or ISBN-10: 1429298642

Instructor:Claudia Tyler and John LattoTime:Tuesday & Thursday 11:00am - 12:20pmPlace:BLDG. 494, Room 143

# **BIOLOGY CS 101, Section 1**

# EC# 02816

# **ADVANCED BIOLOGY COLLOQUIUM: NEXT STEPS**

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: | John Latto and Claudia Tyler |
|-------------|------------------------------|
| Time:       | Tuesday 1:00pm- 2:50pm       |
| Place:      | BLDG. 494, Room 143          |

# **CHEMISTRY CS 10, Section 1**

# EC#07369

# **Introduction to Chemical Literature**

The process of reading and understanding a chemistry paper can seem daunting. Strange layouts, foreign words, and a diverse array of figures, graphs and images combine to create an article that seems foreign at best. Chemical research, however, thrives on the process of understanding, critiquing, and furthering the research that is presented in the format of a journal. To better train the next generation of research chemists, this class aims to deconstruct the chemical journal into an easy, informative, and dare I say, pleasurable read. This class, driven by classroom discussion and activities, will:

1.) discuss a brief history of chemical journals and describe the important journals that are published today

2.) instruct students in how to search through the chemical literature

3.) describe the layout of the journal in great detail including the

- a.) abstract
- b.) introduction
- c.) experimental methods
- d.) results, figures and discussion
- e.) conclusion
- 4.) Introduce the characterization techniques frequently used in the literature
- 5.) Offer insight into the ethics of Chemical literature

By the end of the class, students are expected to be able to research a topic of their choosing and review it.

This class is geared towards Chemistry and Biochemistry first and second years to help acclimate them into a research climate, however we encourage all interested students to join regardless of their academic standing.

Max: 2 Units

Student Instructors: Joseph Mann and Alex Berry

| Instructor: | Leroy Laverman          |
|-------------|-------------------------|
| Time:       | Tuesday 9:30am- 10:50am |
| Place:      | BLDG. 494, Roo          |

# Chemistry CS 103, Section 1

### EC#07385

# **Problem Solving in General Chemistry**

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:Leroy LavermanTime:Monday & Wednesday 11:00am- 12:00 pmPlace:CCS Building 494 Room 136

# **COMPUTNG 10, Section 2**

### EC#61333

# **Computer Learning**

Introduction to basic methods and techniques in Machine Learning, Natural Language Processing, and Deep Learning. Will begin with an overview of Probability, Linear Algebra, and Calculus necessary for the later topics. Some methods include Linear/Logistic Regression, Naive Bayes, Language Modeling, and several Neural Network architectures. Applications include (but not limited to) Computer Vision, Information Retrieval, and Robotics. The main goal of this course is to prepare students for graduate level Artificial Intelligence classes and potential research opportunities.

Max: 2 Units

For CCS: No Prerequisites (Math 4a Recommended) Non CCS: Math 4a required.

Student Leaders: Daniel Spokoyny and Jeremy Irvin

Instructor:Omer EgeciogluTime:Tuesday & Thursday 5:00pm- 6:50pmPlace:BLDG. 494, Room 143

# **COMPUTING CS 1B, Section 1**

# EC#61283

# **Computer Programming and Organization**

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

Instructor:Murat KaraormanTime:Monday & Wednesday 6:00pm - 7:20pm

Winter 2016 Course OfferingsPlace:BLDG. 494, Room 143

# **Programming Lab**

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:Murat KaraormanTime:Monday and Wednesday 7:30pm- 8:50pmPlace:BLDG. 494, Room 143

# **COMPUTING CS 10, Section 1**

# **Faculty Research Seminar in Computer Science**

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, CMPTG 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?

Contact Phill Conrad at pconrad@cs.ucsb.edu

### Special Instructions and/or Prerequisites:

Open to these majors:

- \* CMPTG (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 CMPTGCS 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.

| Instructor: | Phill Conrad                 |
|-------------|------------------------------|
| Time:       | Friday 1:00pm-2:00pm         |
|             | Friday 2:00pm-2:30pm         |
| Place:      | Harold Frank Hall, Room 1132 |
|             | Harold Frank Hall, Room 1152 |

# **COMPUTING CS 130H, Section 1**

EC# 61366

# **Explorations in Cryptography**

Cryptography is the art and science of designing encryption algorithms for the purpose of providing private and authenticated communication. Once a sub-field of military communications, cryptography has gone mainstream since 1976 with the invention of public-key cryptography which allows two parties who previously have never met to establish a secure channel between them. Techniques, mechanisms, and tools of cryptography are used today for network security, digital signatures, and privacy in computer systems ranging from tiny RFID tags to large servers.

This is a project-oriented course in order to explore cryptographic methods and algorithms such as secret-key and public-key encryption algorithms, hash functions, digital signatures, deterministic and true random number generators. We are particularly interested in actual software and hardware realizations of cryptosystems and their secure implementations, rather than idealized, mathematical proofs of security.

Students taking this course will form small teams to work on their selected projects, while following the lectures given by the Instructor and at the same time scrutinizing the projects of other teams.

Instructor: Time: Place: Cetin Koc Friday 3:00pm- 5:50pm BLDG. 494, Room 143

# **COMPUTING CS 140, Section 1**

### EC#61382

# **Agile SaaS Development**

This course will focus on developing one or more Software as a Service (SaaS) applications (SaaS) applying principles from the Agile Manifesto ( http://www.agilemanifesto.org/ )

Course participants will have an opportunity to "learn by doing", contributing to one or more open source projects chosen by the instructor, applying technologies such as Rails, Node.js, AngularJS, and others.

There will be an emphasis on testing: unit tests, integration tests, and end-to-end tests. Participants will learn cloud computing platforms for deployment and continuous integration such as Heroku and TravisCI.

### **Prerequisites:**

CMPTGCS 1A or CMPSC 32

### **Required Texts:**

Patterson D. & Fox, A *Engineering Software as a Service: An Agile Approach Using Cloud Computing* Strawberry Canyon LLC; 2nd edition (April 16, 2013) ISBN-10: 0984881247 ISBN-13: 978-0984881246

| Instructor: | Phill Conrad                         |
|-------------|--------------------------------------|
| Time:       | Monday & Wednesday 12:30pm - 1:50 pm |
| Place:      | BLDG. 494, Room 143                  |

## **INTERDISCIPLINARY CS 10, Section 2**

EC#28175

# Science at the Intersection

This colloquium offers students an opportunity to discuss science from a social point of view. There will be a huge variety of subjects ranging from racism, classism, and sexism in science to art, religion, and politics. This is a discussion based course. Therefore, participation is crucial. There will be minimal reading and one small paper for the course.

Max: 2 Units

Student Leaders: Andrew Dawson and Henry Morse

Instructor:Leroy LavermanTime:Monday & Wednesday 10:00am- 10:50amPlace:BLDG. 494, Room 164b

# **INTERDISCIPLINARY STUDIES CS 10, Section 1**

EC#28167

# Symmetry and Aesthetics in Contemporary Physics

An interdisciplinary seminar to explore contemporary physics as motivated by Symmetries in Physical Laws, using the Arts as pathways for understanding physics and math.

Symmetry and the search for broken symmetries guide our understanding of the Laws of Physics; symmetry and asymmetry are also at the heart of our aesthetic experiences in the arts, and are significant in biology and neuroscience. In this interdisciplinary seminar we will question why mathematics is (or should be) a language of nature, investigate the ways in which spacetime and matter interact, visualize physics concepts through the arts, and explore the nature of our own thinking. We will analyze works by theoretical physicists, study artists who have attempted to express Einstein's theories on canvas, and interrogate the ways in which 21st century physics is pushing the limits of human imagination. We will meet artists and scientists who are blending art, math, music, and computer science in their research.

See course website: http://web.physics.ucsb.edu/~jatila/symmetry-and-aesthetics-in-physics.html

Course in the news last year: http://www.news.ucsb.edu/2015/015237/art-physics

Course on face book: https://www.facebook.com/Symmetry-and-Aesthetics-in-Contemporary-Physics-1434215913537618/timeline/

### **Required Texts:**

Zee, A. ISBN: 978-0-691-13482-6 Symmetry 2007 ed.

Princeton Univ. Press

And a course reader, available from AS Notes

Instructor:Jatila van der VeenTime:Friday 2:00pm- 4:50pmPlace: ?BLDG. 494, Room 164B

# **LITERATURE CS 15, Section 1**

### EC# 29645

# **Science Fiction Body/Mind**

If literature is a sample of modern culture, science fiction is a sample of both modern culture and modern scientific perspectives. This class is thus intended to analyze how scientific information, cultural values, and philosophical trends are represented in science fiction. Because such an approach is broad, this class will focus specifically on the postmodern and post-postmodern perspective through the theme/lens of the body/mind divide. As a result, specific topics will range from the body-horror trope - horror based on reversing the priority of mind over body by drawing attention to the latter's fragility; to modern theories in cognitive science; to the recent surge of kinesthetic literature; to performance art; to AI; and to the idea of a Singularity. These topics will be emphasized through supplementary literature drawn from related fields of study. Basically, expect a discussion of science fiction texts and why they are both awesome and important. Accost me in a hallway for more information. Additional reading will be provided.

Max: 2 Units

| <b>Required Text</b><br>Gibson, W<br>ISBN-10: 0441569595 | Neuromancer | Ace Publishing, Mass Market Paperback Ed. |
|--|-------------|---|
| Stross, C<br>ISBN-10: 0441014151                         | Accelerando | Ace, Reprint Edition (January 1, 2006)    |
| Stanley Robinson, K<br>ISBN-10: 1841499986               | 2312        | Orbit (June 25, 2013)                     |
| Watts, P<br>ISBN-10: 0765319640                          | Blindsight  | Tor Books (March 4, 2008)                 |
| Student Leader: Spencer Ph                               | illips      |   |

Instructor:Jim DonelanTime:Tuesday1:00pm- 2:50pmPlace:BLDG. 494 Room 160b

# LITERATURE CS 15, Section 2

# EC#29652

### Lit Lab: The Making of Teeth & SPECTRUM

A course to see through the publication of this year's editions of Into the Teeth of the Wind and SPECTRUM Literary Journal. Weekly meetings focus on reviewing submissions, increasing the visibility of our publications, and the nitty-gritty of creating a literary journal. Readings include the previous years' editions of each magazine, the slush piles, and current issues of acclaimed periodicals, such as Poetry, The Kenyon Review, The Paris Review, and The Pushcart Prize.

Max: 2 Units

Student Leaderr: Robert Wickham

### **Required Text:**

| Henderson, B<br>978-1888889802            | The Pushcart Prize XL: Best of the Small Presses | 2016 Ed., Pushcart Press |
|---|--|--------------------------|
| Lehman, D and Alexi<br>978-1476708201     | e, S The Best American Poetry 2015               | 2015 Ed., Scribner       |
| Boyle, T. C. and Pitler<br>978-0547939414 | T, H The Best American Short Stories 2015        | 2015 Ed., Mariner Books  |

Instructor:Teddy MackerTime:Thursdays 7:00pm- 8:50pmPlace:BLDG. 494, Room 136

# LITERATURE CS 102, Section 2

EC#29744

# **Fiction Workshop**

Fiction Workshop gives students the opportunity to work on short forms of fiction in a workshop setting. Students will also read examples of contemporary short fiction and research contemporary fiction markets.

### **Required Texts:**

Boyle, T.C. Best American Short Stories 2015 ISBN: 978-0547939414 Mariner Books

Bernays, A & Painter, P *What If? Writing Exercises for Fiction Writers* Pearson Longman 3<sup>rd</sup> ed. ISBN: 978-0205616886

Instructor:Kara Mae BrownTime:Monday & Wednesday 2:00pm- 3:50pmPlace:BLDG. 494, Room 160B

LITERATURE CS 102, Section 1

EC# 29736

# **Creative Nonfiction**

We'll in engage in the practice of the writing of Creative Nonfiction using the workshop format.

Instructor:Jerevey TrevalonTime:Friday 11:30am - 2:20pmPlace:BLDG. 494, Room 160B

# Milan Kundera

We shall read major and minor works of Milan Kundera.

### **Required Texts:**

| Kundera, M<br>ISBN-10 00611485 | The Unbearable Lightness of Being<br>520   | Harper Perennial Modern Classics |
|--------------------------------|--|----------------------------------|
| Kundera, M<br>ISBN-10 00609321 | The Book of Laughter and Forgetting<br>147 | g Harper Perennial               |
| Kundera, M<br>ISBN-10 00609970 | <i>Life Is Elsewhere</i><br>028            | Harper Perennial                 |
| Kundera, M<br>ISBN-10 00609970 | Laughable Loves<br>036,                    | Harper Perennial                 |
| Kundera, M<br>ISBN-10 00609323 | Immortality<br>384                         | Harper Perennial                 |
| Kundera, M<br>ISBN-10 00600010 | Ignorance<br>)7                            | Harper Perennial                 |
| Kundera, M<br>ISBN-10 00609284 | Slowness                                   | Harper Perennial                 |

Instructor:Caroline AllenTime:Monday & Wednesday 12:30pm- 1:50pmPlace:BLDG. 494, Room 160B

# LITERATURE CS 114, Section 1

# The Biopolitics of the Female Body in Twentieth-Century Literature

This course traces the female body as an area of ideological contention in the English-speaking world, and in particular in the United States, from the 1890s to the early 21st century. Overarching concerns will include the formation of concepts and understandings of identity and sexuality, the interconnection of social roles and power structures with questions about female embodiment and "appropriate" behavior, the question of who benefits from existing understandings about "the way things really are," and a continuing emphasis on connections between the course's gender- and sexuality-based concerns and "obvious truths" in other domains, especially race and class. The course emphasizes theoretically informed reading practices, looking through a series of related lenses at shifting literary representations of femininity through the long twentieth century. Student work throughout the quarter will involve regular blog entries using the course's theoretical selections to comment both on literary texts and on contemporary news stories and/or politics, plus a final analytical or artistic project that incorporates, encapsulates, deploys, and/or responds to the course's major issues and topics.

### **Required Texts:**

| Chopin, K<br>ISBN 978-0486277868                 | The Awakening                    | Dover            |
|--|----------------------------------|------------------|
| McCullers, C<br>ISBN 978-0618492398              | The Member of the Wedding        | Mariner          |
| Le Guin, U. K.<br>ISBN 978-0441007318            | The Left Hand of Darkness        | Ace              |
| Foucault, M<br>edition"<br>ISBN 978-0679724698). | The History of Sexuality, Vol. 1 | Vintage "reissue |
| Morrison, T<br>ISBN 978-1400033416               | Beloved                          | Vintage          |

| Instructor: | Patrick Mooney                    |
|-------------|-----------------------------------|
| Time:       | Tuesday & Thursday 5:00pm- 6:20pm |
| Place:      | BLDG. 494, Room 160B              |

# Winter 2016 Course Offerings **MATHEMATICS CS 101B, Section 1**

# **Problem Solving Seminar**

This is the second part of a sequence of two courses about mathematical problem solving. These courses are aimed for students who know some mathematics, who enjoy mathematics, and would like to spend some time solving intriguing, mysterious, interesting, fun, ... problems. Problems this quarter will be most likely focused on the area of Combinatorics.

Instructor:Maribel Bueno CachedinaTime:Tuesday & Thursday 3:30pm - 4:50pmPlace:BLDG 494, Room 164B

# Winter 2016 Course Offerings **MATHEMATICS CS 108A, Section 1**

# Advanced Linear Algebra I

This is a first-year course which is part of a sequence of two consecutive courses.

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 vectors 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.

**Prerequisites:** Math 8 or Math CS 128

### **Required Texts:**

Friedberg, S. H., Insel, A. J., Spence, L. E. ISBN: 0-13-008451-4

Linear Algebra

Prentice Hall, 4<sup>th</sup> ed.

Instructor:Maribel Bueno CachadinaTime:MWRF Alternating between MWR or MWF 11:00am - 12:20pmPlace:BLDG. 494 Room, 164B

# Winter 2016 Course Offerings **MATHEMATICS CS 120, Section 1**

EC#32722

## SELECTED TOPICS IN DISCRETE MATHEMATICS II

How many ways can you make change for a dollar? The first part of this course will answer this question (and many others) using "generating functions," an important and beautiful tool that is indispensable in discrete mathematics. In the second part of this course, we'll discuss the art of asymptotics, that is, estimating large numbers.

### **Optional Texts:**

| Wilf, H<br>ISBN 9781568812793         | Generatingfunctiono | <i>logy</i> Taylor & Francis, 3 <sup>rd</sup> ed. |
|---------------------------------------|---------------------|---|
| Spencer, J<br>ISBN: 978-1-4704-0904-3 | 2005 Asymptopia     | American Mathematical Society, 2014               |

| Instructor: | Karel Casteels                    |
|-------------|-----------------------------------|
| Time:       | Monday & Wednesday 2:00pm- 3:50pm |
| Place:      | BLDG. 494, Room 164B              |

## **MATHEMATICS CS 122A, Section 1**

### EC#62190

### **Complex Analysis**

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. The course will explore its analytic and geometric sides, balancing theory and computation. Topics during the Winter Quarter will include complex numbers, differentiability of functions of one complex variable, Cauchy-Riemann equations, conformal mapping, Cauchy's Theorem, the Cauchy Integral Formula and its consequences, etc.

#### **Prerequisites:**

A rigorous course in introductory calculus/real analysis. Students should be familiar with the concepts of limit, continuity, derivative, Riemann integral, and infinite series. Students should be able to execute coherent mathematical proofs. Math CS 106 would be sufficient.

#### **Optional Texts:**

Marsden, J & Hoffman, MBasic Complex Analysis1998 ISBN-13: 978-0716728771 ISBN-10: 071672877X

W. H. Freeman 3<sup>rd</sup> ed.

Instructor:Thomas SiderisTime:Monday & Wednesday 10:30am- 11:50 amPlace:BLDG. 494, Room 160B

# **MATHEMATICS CS 117, Section 1**

# **Intro to Real Analysis**

Review of set theory
Sequences and convergence
Limits of functions
Continuity.
Intro to differentiation (as time permits)

Prerequisites Some understanding of mathematical proof.

### **Required Texts:**

Edward, G ISBN 0-534-35177-8 Introduction to Analysis

American Math Society 5<sup>th</sup> ed.

### **Optional Texts:**

Other useful references: An easier book with lots of worked out examples: Steven Lay, Analysis with an Introduction to Proof, 5th edition. (Older editions may be cheaper.) A harder book, but well-written and regarded as a classic: Walter Rudin, Principles of Mathematical Analysis.

Instructor:John MooreTime:Monday, Wednesday, & Friday 1:00pm- 1:50pmPlace:BLDG. 494, Room 164B

# **MUSIC COMPOSTION CS 101, Section 1**

EC# 38265

# **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 lesson time prior to the first day of classes.

Information: leslie.hogan@ccs.ucsb.edu

Instructor:Leslie HoganTime:TBAPlace:BLDG. 494, Room 154

# **MUSIC COMPOSITION CS 101, Section 2**

EC# 38273

# **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 HaladynaTime:TBARooms:Music Building, Room 0313

## **MUSIC COMPOSTION CS 105, Section 3**

### EC#38398

# **Readings in New Music**

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 so that we may hire the best musicians in the orbit of the university for these readings. Participants should bring take-away media with them to each class session on which they are scheduled: flash drive, USB port-drive, or CD-R/RW.

Recording services will only be contracted for those CCS and L&S undergraduate music composition 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.

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 Leslie or Jeremy in advance of the first class meeting. SESSION ONE is partly a WORKING session! \* A 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. If your works utilize percussion, you must include a complete and accurate list of the instruments needed as well as the number of players required. \* Performance materials if available. The sooner we have them, the better your recording will be. We need one copy of your score and all the parts. Note well: students are responsible for printing parts, not the faculty.

Questions? leslie.hogan@ccs.ucsb.edu

Restricted to undergraduate music composition majors. Priority given to CCS students; music department composition majors may enroll on a space available basis

Instructor:Leslie Hogan (lead) and Jeremy HaladynaTime:Thursday 12:30pm- 3:30pmPlace:Kerr Hall, Room 2110 (Sound Recording)

# Winter 2016 Course Offerings **Music Composition 105, Section 4**

### EC#38406

# Pitch as a Compositional Tool

This is the week-by-week curriculum for the course: 1. The Scaling of Subjective Pitch 2. Sensory Consonance and Dissonance 3. Pitch Intonation and Temperament 4. Measuring Harmonicity 5. The Rationalization of Scales 6. The North Indian Rága System 7. Musically relevant Phonetics 8. What is Microtonality? 9. Parametric Aspects of Timbre 10. Diachrony: Rhythm – Pitch – Timbre

Instructor:Clarence BarlowTime:Tuesdays 4:00pm- 6:00pmPlace:Music, Room 1129

# **MUSIC COMPOSITION CS 105, Section 2**

EC#38380

# **Commedia Project - Section 2**

Commedia Project - Section 2. Section 2 of this course will include actor auditions, casting, Commedia del 'Arte training, rehearsals and performances. The rehearsals will incorporate the student composers' scores from Section 1 and culminate in two public performances in the Old Little Theater on Thursday 3/10 and Friday 3/11.

As this is a performance class, rehearsals will be held 5 days a week, Monday-Friday. First day for Section 2 will be Tuesday 2/9. NOTE: Jeremy Haladyna will be teaching Section 1 in the OLT W/R 7-10:00, beginning 1/6. Starting 2/9 he will move to Rm 154.

| Instructor: | Gerry Hansen            |
|-------------|-------------------------|
| Time:       | MTWRF 7:00pm-9:50pm     |
| Place:      | Bldg. 494, Room 164 (OL |

# **MUSIC COMPOSITION CS 105, Section 1**

# The COMMEDIA PROJECT, Section 1

This course will have students supplying original music to a new comedic play in the tradition of the Italian "commedia dell'arte." This art form goes back at least 500 years and features a mix of stock characters, physical comedy, verbal wordplay and comic routines.

Composers within CCS should take this section. We will write, rehearse and perform the instrumental music that will accompany the "commedia" scenario. This scenario has been developed by Dr. Gerry Hansen of CCS. Actors, designers, costumers and technicians interested in the project should investigate Dr. Hansen's "Commedia Project, section 2."

The project culminates in 2 public performances done live in the OLT during week 10.

This course hones and refines compositional abilities in matching music to ACTION. There will be plenty of it--zany, energized, and fun! Are you ready to match musical wits with Arlecchino, Capitano and Pantalone??

Class time is: WEDNESDAY and THURSDAY nights, 7-10 pm, starting Wed. 1/6 and Thurs. 1/7. From 3/4-3/9, composers are on call evenings as needed. These nights will see the music integrated within the play. You will be able to keep commitments to official Music Dept. end-of-quarter concerts during this time. Performances are Th 3/10 and Fr 3/11. Composers wishing to play the music live in the house must be free these two nights, without limitations, as well as for final dress Wed 3/9.

Instructor:Jeremy HaladynaTime:Wednesday & Thursday 7:00pm - 9:50pmPlace:BLDG. 494, Room 154
## Winter 2016 Course Offerings

## Winter 2016 Course Offerings **PHYSICS CS 15B, Section1**

## **EXPERIMENTAL PHYSICS**

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

This is the second guarter 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.

#### **Required Textbooks:**

Essick, J. Hands-On Introduction to LabVIEW for Scientists and Engineers Oxford University Press Moore, J. Building Scientific Apparatus Peachpit Press

| Instructor: | Debra Fygenson                          |
|-------------|---|
| Time:       | Wednesday, 2:00 pm - 2:50 pm (Lecture); |
|             | Wednesday, 3:00 pm - 5:50 pm (Lab)      |
| Place:      | Broida Hall, Rm. 3314                   |

## Winter 2016 Course Offerings

# Winter 2016 Course Offerings **PHYSICS CS 15B, Section 2**

## **Experimental Physics**

#### 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.

#### **Required Textbooks:**

| Essick, J.<br>Moore, J. | Hands-On Introduction to LabVIEW for Scientists and Engineers<br>Building Scientific Apparatus | Oxford University Press<br>Peachpit Press |
|-------------------------|--|---|
| Instructor<br>Time:     | : Debra Fygenson<br>Wednesday, 2:00 pm - 2:50 pm (Lecture);<br>Friday, 3:00 pm - 5:50 pm (Lab) |   |
| Place:                  | Broida Hall, Rm. 3314  |   |

# Winter 2016 Course Offerings **PHYSICS CS 32, 1**

## **Mechanics and Waves**

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.

#### **Required Texts:**

| Kleppner and Kolenkow<br>ISBN 13: 9780521198219        | An Introduction to Mechanics                      | McGraw Hill |
|--|---|-------------|
| Resnick, Halliday, and Krane<br>ISBN 13: 9780471320579 | <i>Physics, Volume 1 (5<sup>th</sup> edition)</i> | Wiley       |
| Feynman, Leighton and Sands<br>ISBN 13: 9780465024933  | The Feynman Lectures on Physics, Vol. I           | Basic Books |

| Instructor: | Tengiz Bibilashvili (Lecture)                     |
|-------------|---|
|             | TBA (Problem Sessions)                            |
| Time:       | Tuesday and Thursday, 3:30 pm - 4:50 pm (Lecture) |
|             | Wednesday, 1:00 pm - 2:50 pm (Problem Session I)  |
|             | Wednesday, 3:00 pm - 4:50 pm (Problem Session II) |
| Place:      | Bldg. 387, Rm. 104 (Lecture)                      |
|             | Bldg. 387, Rm. 104 (Problem Sessions)             |

# Winter 2016 Course Offerings **PHYSICS CS 35, 1**

## **Electromagnetism and Optics**

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

#### **Required Texts:**

| Resnick, Halliday,<br>ISBN 13: 9780471 | & Krane<br>401940      | Physics, vol. 2                           | Wiley       |
|--|------------------------|---|-------------|
| Purcell<br>ISBN 13: 9781107            | 7013605                | Electricity and Magnetism                 | McGraw-Hill |
| Feynman<br>ISBN 13: 9780465            | 5024940                | The Feynman Lectures in Physics Volume II | Basic Books |
| Instructor:                            | Sathya Gu<br>TBA (Prob | ruswamy (Lecture)<br>olem Session)        |             |

|        | I DA (I I Oblem Session)                           |
|--------|--|
| Time:  | Tuesday and Thursday, 3:30 pm - 4:50 pm (Lecture)  |
|        | Thursday, 1:00 pm - 2:50 pm (Problem Session I)    |
|        | Thursday, 10:00 am - 11:50 am (Problem Session II) |
| Place: | Bldg. 387, Rm. 101 (Lecture)                       |
|        | Bldg. 387, Rm. 101 (Problem Sessions)              |
|        |  |

## **PHYSICS CS 140**

## **VECTOR ANALYSIS WITH APPLICATIONS TO PHYSICS**

#### 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: | Tengiz Bibilashvili     |
|-------------|-------------------------|
| Time:       | Friday, 2:00pm - 3:50pm |
| Place:      | PHELPS 1448             |

College of Creative Studies Spring 2014 Course Offerings

## Art CS 101, Section 1

EC#01420

#### Drawing

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: | Dan Connally           |
|-------------|------------------------|
| Time:       | Tuesday 1:00pm- 3:20pm |
| Place:      | BLDG. 494, Room 136    |

## ART CS 101, Section 2

## Life Drawing

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: | Hank Pitcher            |
|-------------|-------------------------|
| Time:       | Tuesday 9:00am- 12:50pm |
| Place:      | BLDG. 494, Room 120     |

## ART CS 102, Section 1

## EC#01487

## Landscape Painting

Our landscape today includes nature, but places like Isla Vista and other developed areas can be very unnatural. This class is about what we have to see outside and includes, but is not limited to "plein-air" painting. Eugene Boudin said, "Two strokes in the field is worth two weeks in the studio." We will explore the methods, materials, tradition, and opportunities of painting in the open air. Half of the class meetings will be painting on location and the other half will be in the classroom discussing what we make and looking at other painters for ideas and inspiration.

All levels welcome, but you must have some experience drawing and painting.

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

Instructor:Hank PitcherTime:Tuesday 9:00pm- 12:50pmPlace:BLDG. 494, Room 120

## Art CS 104, Section 1

#### EC#01529

## **Between Printing and Poetry**

In this studio course we will study the practical and theoretical relationship between various forms of printing and poetry. Our research will include shaped poetry and other forms of expressive creative writing from the earliest calligraphic examples to the most recent digital typography, and the substrates or media upon which they have been drawn, written, painted, printed, and displayed. We will visit Special Collections at the UC Santa Barbara Library and other collections off campus, to prepare us for what we discuss, produce, and critique in the studio.

#### **Prerequisites:**

Students must have an interest in language and typography, and how they go together, and be willing to work independently in a studio environment, but there are no formal prerequisites for this course.

This class is designed for CCS Art and Literature students, and is open to anyone else interested in the relationship between printing and poetry.

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

Instructor:Harry ReeseTime:Monday and Wednesday 9:00am- 11:50amPlace:Arts 2235

## Art CS 105, Section 1

## EC#01552

## Artists' Books: The Edition! (Intermediate and Advanced Approaches)

Open to students who have taken artists' books in CCS or the Department of Art and wish to further pursue the art form. Students should be fairly well versed in letterpress printing techniques, relief print methods, and/or digital printing methods.

In this course you will have the chance to develop an individual limited edition artists' book of your own design. While the possibilities are vast, students should pursue a structure that can be completed or considerably advanced during the length of the quarter. Come to the first class meeting with your idea for the edition you hope to create.

In the first part of the quarter we will review basic book structures, binding techniques and materials. Books and artists' book-models will be available in the printshop for your research. Many supplies will be provided. We will also view artists' books in the Special Collections Library. Early on each student will refine their design and develop a production time-line for the completion of their book edition.

This course is intended for students who are self directed and have a fairly good command of the materials and techniques needed to complete a small edition. You will be working individually, but within a collaborative environment. Advising and class discussions will help to guide your projects toward completion.

Please contact the instructor for an approval code indicating your experience.

#### **Prerequisites:**

The course is open to students who have taken artists' books in CCS or the Department of Art. Students should also be fairly well versed in letterpress printing techniques and other print methods, and/or digital printing methods.

Please contact the instructor for an approval code indicating your experience.

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

Instructor: Linda Ekstrom

Spring 2014 Course Offerings **Time:** Wednesday 1:00pm- 4:50pm Lab; Thursdays 6:30pm-8:20pm Place: BLDG. 494, Room 107

## Art CS 112, Section 1

EC#01628

## **Reading Painting**

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:Dan ConnallyTime:Wednesday 5:00pm- 6:20pmPlace:BLDG. 494, Room 136

## ART CS 120, Section 1

EC#01669

#### Altscape

Ideas of landscape have permeated the human psyche for ages. In this current ecological crisis that we find ourselves, the idea of landscape and our connection to it both artistically and metaphysically is more important than ever. The age of exploration having long ago come to a close, there are new types of landscapes we can look to in order to fulfill our desire to explore our world. This course will ask important questions as to our role as part of the physical landscape as well as explore different ways of thinking, making, and viewing landscapes. Projects, text, site visits, and a few films will allow these questions to be creatively explored.

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

Instructor:Patrick GilbertTime:Tuesday 3:00pm- 5:50pmPlace:Arts Sculpture Atrium

## **Biology CS 25, Section 1**

EC#02980

## **Walking Biology**

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.

#### **Required Text:**

Lentz, J. *A Naturalist's Guide to the Santa Barbara Region.* Heyday Books, Berkeley, CA. 2013 ISBN: 978-1-59714-241-0

| Instructor: | Claudia Tyler           |
|-------------|-------------------------|
| Time:       | Thursday 1:00pm- 3:50pm |
| Place:      | BLDG. 494, Room 136     |

## **Biology CS 30, Section 1**

## Introductory Biology: Ecology and Physiology

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.

#### **Required Text:**

Sadava, Hillis, Heller, and Berenbaum ISBN-10: 1-4641-4165-7 ISBN-13: 978-1-4641-4165-2 *Life, the science of biology* 

Sinauer (10th edition)

#### **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: | Claudia Tyler and John Latto         |
|-------------|--------------------------------------|
| Time:       | Tuesday and Thursday 9:30am- 10:50am |
| Place:      | BLDG. 494, Room 143                  |

EC#03004

## **Biology CS 101, Section 1**

### EC#03020

## Advanced Biology Colloquium: Science Communication

This class is designed for 2nd year Biology students. We will investigate the process of scientific research and how results are communicated. Participants will present their own research and receive feedback.

Instructor:Kathy FoltzTime:Thursdays 11:00am- 12:50pmPlace:BLDG. 555, Room 3103

## **Biology CS 101, Section 2**

#### EC#03038

## **Classic papers in Ecology and Evolution**

In this graduate seminar style class, students will read and discuss a set of "classic papers" spanning a wide range of topics in Ecology and Evolution. CCS Biology faculty will provide historical context for the papers, including conceptual and methodological aspects as well as the significance of the work.

Instructor:John LattoTime:Monday 12:00pm- 1:50pmPlace:BLDG. 494, Room 143

#### **CMPTGCS 20, Section 1**

EC#56598

#### **Introduction to Computer Science for non-majors**

This course is intended as a FIRST course to introduce non-CS majors to Computing, and to programming as a problem solving tool. This course is intended to be a "CCS version" of CMPSC 8. Because of high demand for CMPSC 8, and a shortage of seats for non-majors, it is often very difficult for CCS students that want a course in programming to get enrolled. This offering is intended to help address that shortfall. As such, this offering is limited to CCS non-CS majors ONLY, i.e. students in these majors: ARTCS, BIOCS, CHBCS, LITCS, MATCS, MUSCS, PHYCS. This course is NOT appropriate for students that already have significant programming background.

#### **Prerequisites:**

Open only to these majors: ARTCS, BIOCS, CHBCS, LITCS, MATCS, MUSCS, PHYCS.

Not appropriate for students that already have significant programming background.

#### **Required Text:**

Guttag, J. V. Introduction to Computation and Programming Using Python, Revised And Expanded MIT PRESS Aug 2013 ISBN: 9780262525008

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

## **CMPTGCS 10, Section 1**

#### EC#56572

#### **Mid-Residency Review**

This course is required for all CCS CS majors that are scheduled to do a mid-residency review in the 2015-2016 school year. This includes all students that matriculated in Fall 2014 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 2016 that have not yet passed an MRR.

#### **Prerequisites:**

Only open to CCS CS and CCS Computing majors.

| Instructor: | Phill Conrad               |
|-------------|----------------------------|
| Time:       | Wednesday 11:00am- 12:20am |
| Place:      | BLDG. 494, Room 143        |

## **CMPTGCS CS 130A, Section 1**

#### EC#56606

## **Computing for the Cloud and Internet of Things**

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. Lead 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-theart 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.

#### **Prerequisites:**

Computing CS 1A, 1B and 1L

Instructor:Murat KaraormanTime:Monday and Wednesday 6:00pm- 8:20pmPlace:BLDG. 494, Room 143

## **CMPTGCS 130G, Section 1**

#### EC#56622

## **Digital Audio Programming Techniques**

The goal is of this course is to develop our understanding of the basic principles upon which digital audio programming is based, including but not limited to: time and frequency domain representation of signals, sampling, filters, additive and subtractive synthesis, amplitude and frequency modulation.

#### **Prerequisites:**

Programming skills are essential. Basic ability to work with common practice music notation (staves, clefs, scales, notes, rests, etc.) is also helpful since many applications will involve modelling and creating musical sounds.

| Instructor: | Phill Conrad                         |
|-------------|--------------------------------------|
| Time:       | Monday and Wednesday 9:00am- 10:20am |
| Place:      | BLDG. 494, Room 143                  |

## **INTERDISCIPLINARY CS 10, Section 1**

EC#26377

## **Symmetry and Aesthetics**

Symmetry, and the search for broken symmetries, guide our understanding of the Laws of Physics. Symmetry and asymmetry are also at the heart of our aesthetic experiences in music, dance, and art. In this interdisciplinary seminar we will study contemporary views of spacetime and cosmology from the viewpoint of Symmetry. We will utilize learning strategies from the arts to develop a deeper understanding of the reality which lies beyond our sensory perception, and which is described by mathematics. You will meet artists and scientists who are working at the frontiers of their disciplines, and you will have the opportunity to create your own physics work of art.

See last year's course to get an idea of what to expect: http://web.physics.ucsb.edu/~jatila/symmetry-and-aesthetics-in-physics.html

#### **Prerequisites:**

No pre-reqs. Just a sincere interest in symmetry, physics and one or more of the arts, how these concepts are fundamentally related, and a desire to create your own physics work of art in any medium you choose.

**Required Text:** Zee, A. ISBN: 978-0-691-13482-6

Symmetry 2007 ed.

Princeton Univ. Press

And a course reader, available from AS Notes

Instructor:Jatila van der VeenTime:Friday 1:00pm-3:50pmPlace:BLDG. 494, Room 143

#### Mathematics CS 108B, Section 1

EC#56630

## **Advanced Linear Algebra II**

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.

#### Prerequisites: Math CS 108A

Instructor:Maribel Bueno CachedinaTime:Monday, Wednesday, Thursday, and Friday 11:00pm- 12:50pmPlace:BLDG. 494, Room 164b

## Mathematics CS 120, Section 1

#### EC#30486

## **Topics in Discrete Mathematics**

Combinatorial Sequences and Structures - An exploration of various constructions in combinatorics such as designs, codes, finite geometries and universal cycles.

Instructor:Karel CastelsTime:Monday and Wednesday 2:30pm- 3:50pmPlace:BLDG. 494, Room 164b

#### Mathematics 121, Section 1

EC#56648

## Probability

This will be an introductory course on Probability Theory, with an emphasis on discrete probability. We will cover the basic formalisms of probability, discrete and continuous distributions, combinatorial methods, generating functions, conditioning, Law of Large Numbers and Central Limit Theorem. The latter part of the course will introduce the theory of stochastic processes including random walks, Poisson process and Brownian motion. Applications to Biology, Computer Science, Engineering, and Physics will be discussed.

#### **Required Text:**

Gharamani, S. *Fundamentals of Probability with Stochastic Processes* Prentice Hall, 3<sup>rd</sup> Ed. 2005 ISBN: 0131453408, 9780131453401

| Instructor: | Tomoyuki Ichiba                      |
|-------------|--------------------------------------|
| Time:       | Tuesday and Thursday 9:00am- 10:20am |
| Place:      | BLDG. 494, Room 164b                 |

#### Mathematics CS 122B, Section 1

EC#56655

## **Complex Analysis II**

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.

Prerequisites: CS120/CS122A with a passing grade

#### **Required Text:**

Marseden, J. and Hoffman, M. Basic Complex Analysis ISBN-10: 071672877X ISBN-13: 978-0716728771 W. H. Freeman, 1998. 3rd Ed

Instructor:Thomas SiderisTime:Monday and Wednesday 10:30am- 11:50amPlace:BLDG. 494, Room 164b

## Mathematics CS 120, Section 2

#### EC#30494

## Set Theory and Logic

I will cover the basic aspects of set theory and first order logic.

## **Required Text:**

Tarski, A.Introduction to Logic: and to the Methodology of Deductive SciencesDover PublicationsISBN: 978-0486284620ISBN: 048628462X

Kleene, S. C. ISBN: 978-0486425337 ISBN: 0486425339 Mathematical Logic

**Dover Publications** 

| Instructor: | Mihai Putinar                      |
|-------------|------------------------------------|
| Time:       | Tuesday and Thursday 2:00pm-3:20pm |
| Place:      | BLDG. 494, Room 164B               |

## **Music Composition CS 101, Section 2**

EC#34892

#### **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 HaladynaTime:TBARooms:Music Building, Room 0313

## Music Composition CS 101, Section 1

#### EC#34884

## **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.

Information: leslie.hogan@ccs.ucsb.edu

Instructor:Leslie HoganTime:TBAPlace:BLDG. 494, Room 154

## Music Composition CS 102, Section 1

EC#34942

#### **Rhythm II: Beyond the Barline**

Rhythm in its broadest sense is the way sound is organized over time--and considering that music is a time based art form, a thorough understanding of rhythm and how it functions in various contexts is essential for the composer. In the first part of the course, taught in Fall 2015, the focus was primarily on rhythm in metrical contexts. Rhythm II will focus on rhythm in non-metrical and hybrid contexts. We'll examine all kinds of ways of notating rhythm so that it can be understood by the performer and discuss how best to determine the most effective way of conveying ideas to the performer. Original work for the class will include both pitched and non pitched assignments.

Instructor:Leslie HoganTime:Tuesday and Thursday 12:30pm- 1:50pmPlace:BLDG. 494, Room 154

#### **Music Composition CS 102, Section 2**

EC#34959

#### **MUSICAL EXITS: Wind-up Strategies for Composers**

One of the most fascinating aspects of music is leave-taking...how to quit the stage while leaving listeners and performers alike well satisfied. This course will investigate the history of cadences, internal and finalwith the emphasis on the final farewell. Beginning with the Landini cadence of the pre-Renaissance and continuing right through digital/electronic pieces, we'll endeavor to determine "what makes right" in cadential, or sign-off, terms. We will look at mind-blowing examples such as the final coda to Beethoven's "Egmont," the conclusion to Sibelius' 5th and Ives' 2nd symphonies. Initially we'll be engrossed in explaining things from the standpoint of notes. Later, we'll deepen our inquiries to probe into \*rhetorical\* and \*psychological\* reasons as to why certain final endings are as they indeed are. We'll look at such novel, though not uncommon devices as: the \*elliptical\* ending (...) and the musical \*non-sequitur\* ending. And we'll also deal with the internal cadences that work like "yield right of way" signs, enabling composers to change route. Students will meet dozens of great musical conclusions, both well-known and more obscure. In response they will exercise their compositional "chops" in an unusual way. They will need to supply satisfactory endings to recipes that Jeremy will supply, broken off just at that crucial point...

#### **Prerequisites:**

This course is open to anyone \*concurrently\* studying music composition in CCS or Letters & Science. Not advisable to take independent of composition study.

Students will be solving some assigned musical problems, so ability to notate music is essential. Final units are variable and are based on performance, to a maximum of 4.0

Instructor:Jeremy HaladynaTime:Monday, Wednesday, and Friday 1:00pm- 1:50pmPlace:BLDG. 494, Room 154

#### **Music Composition CS 102, Section 1**

EC#34967

## Vernacular Harmony I

This class is especially beneficial for those students who have an interest in harmonic conventions of modern popular music.

The course Vernacular Harmony I provides a critical and cumulative assessment of the harmonic conventions cultivated by twentieth century composers of American vernacular music. By vernacular, I refer principally to folk, blues, jazz and jazz derived styles, and their precursors. Such styles include ragtime, blues, and music of most American musicals, country music, gospel music, post-1950 popular commercial styles, reggae, and the twentieth century jazz styles. While these styles differ in major ways, it is the assertion of the instructor that they are all governed by a common harmonic language. Specifically, the aims of the course are: 1) to introduce a theoretical system that explicates American vernacular harmonic practices from the late nineteenth century until now in a logical yet practical and

intelligible manner; 2) to show the theoretical (creative) possibilities suggested by these practices that may not heretofore have been extensively explored; 3) to illustrate, via musical examples and subsequent analysis, that vernacular harmonic conventions can and should be taught as one harmonic theory; and 4) to present, when possible and appropriate, vernacular harmony in a manner that illuminates its derivative and analogical relationships to traditional European harmonic practices, and concurrently, to explicate the differences that exist between the two traditions.

## **Required Text:**

Stewart, E.Vernacular HarmonyUniversity ReadersISBN: 978-1-60927-783-3

Instructor:Earl StewartTime:Monday, Wednesday, and Friday 11:00am- 11:50amPlace:BLDG. 494, Room 154

## Physics CS 15C, Section 1

EC# 37606

## **Experimental Physics**

## 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:** CS15A and CS15B.

## A lab fee will be assessed to your BARC account.

## **Required Texts:**

| Moore       | Building Scientific Apparatus  | Cambridge University Press |
|-------------|--|----------------------------|
| Instructor: | David Weld<br>Wednesday, 2:00 pm - 2:50 pm (Leo                        | rtura)                     |
| I IIIIC.    | Wednesday, 2:00 pm - 2:50 pm (Let<br>Wednesday, 3:00 pm - 5:50 pm (Let | n)                         |
| Place:      | Broida Hall, Rm. 6334 (Lecture)<br>Broida Hall, Rm. 6334 (Lab)         | ·)                         |
# **Experimental Physics**

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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:** CS15A and CS15B.

A lab fee will be assessed to your BARC account.

**Required Texts:** 

MooreBuilding Scientific ApparatusCambridge University PressInstructor:David WeldTime:Wednesday, 2:00 pm - 2:50 pm (Lecture)Friday, 3:00 pm - 5:50 pm (Lab)Place:Broida Hall, Rm. 6334 (Lecture)<br/>Broida Hall, Rm. 6334 (Lab)

## Physics CS 33, Section 1

#### WAVES, KINETIC THEORY AND RELATIVITY

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 and consent of instructor.

#### **Required Texts:**

Ohanian, H.C.Modern Physics, 2nd editionBenjamin Cummings

| Tengiz Bibilashvili                               |
|---|
| Angela Karmis (Problem Sessions)                  |
| Tuesday and Thursday, 3:30 pm - 4:50 pm (Lecture) |
| Wednesday, 1:00pm – 2:50pm (Problem Sessions)     |
| Wednesday, 3:00 pm - 4:50 pm (Problem Sessions)   |
| Bldg. 387, Rm. 104 (Lecture)                      |
| Bldg. 387, Rm. 104 (Problem Sessions)             |
|   |

#### EC# 37630

## Physics CS 36, Section 1

## **Quantum Physics**

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

| <b>Required Texts:</b><br>Ohanian,.<br>Cummings | Modern Physics, 2nd edition         | Benjamin            |
|---|-------------------------------------|---------------------|
| Feynman, Leighton, Sands<br>Books               | Feynman Lectures on Physics,        | Basic               |
| ISBN-13: 9780465025015                          | Vol. III The New Millennium Edition | : Quantum Mechanics |

| Sathya Guruswamy                                  |
|---|
| Angela Karmis (Problem Sessions)                  |
| Tuesday and Thursday, 3:30 pm – 4:50 pm (Lecture) |
| Thursday, 10:00 am - 11:50 am (Problem Sessions)  |
| Thursday, 1:00 pm - 2:50 pm (Problem Sessions)    |
| Buchanan Room 1934 (Lecture)                      |
| Buchanan Room 1934 (Problem Sessions)             |
|   |

#### Physics CS 140, Section 1

#### **Relativistic Quantum Mechanics**

This course will develop the wave function approach to relativistic quantum mechanics as originally formulated by P.A. M. Dirac. The energies considered will be bellow the energy required for electron positron pair creation. That is, relativistic quantum field theory will not be required. Relativistic quantum field theory would be the topic for a future Physics CS 140 class and there is no time to be presented in the current course.

The list of topics to be covered in detail follows:

Relativistic wave equations. Klein-Gordon equation. Dirac Equation. Spinors. Lorentz Invariance of the Dirac equation. The motion of a free electron. Motion in an electromagnetic field. Existence of the spin. Antimatter: theory of the positron, the Dirac sea. The Hydrogen atom: exact energy levels. Spin-orbit Coupling. The deuteron.

#### **Prerequisite:**

Physics 115A is a prerequisite, and Physics 115B can be taken concurrently. It helps to have some knowledge of tensor analysis in especial relativity including the subscript and superscript notation in 4-D spacetime. Otherwise the notation will be introduced from scratch during the first week of class.

#### **Required Text:**

Dirac, P. A. M.The Principles of Quantum MechanicsOXFORD University Press 4th ED.ISBN: 0 19 8520115019 8520115019 8520115

#### **Optional Text:**

Bjorken, J.D. and Drell, S. D. *LSC Relativistic Quantum Mechanics* McGraw-Hill 1<sup>st</sup> Ed. 1998 ISBN-10: **0072320028** | ISBN-13: **978-0072320022** 

Instructor:Francesc RoigTime:Tuesday and Thursday 11:00pm- 12:20pmPlace:BLDG. 494, Room 160B

# Literature CS 103, Section 1

#### Vignettes, Short Fiction/Memoir and the Short Graphic Narrative

In this Workshop Course we'll examine the vignette, short expository prose, and the short graphic narrative and then write it and workshop it.

#### **Required Text:**

| Blaisdell, B.                   | Great Short Stories by African American Writers                       | Isbn 978-0486-47139-6       |
|---------------------------------|---|-----------------------------|
| Babel, I.<br>ISBN-10: 01404499  | Red Cavalry and Other Stories   | Penguin Classics 2006       |
| Chopin, K.<br>ISBN-10: 16138243 | <i>Silk Stockings and Other Stories</i><br>35 ISBN-13: 978-1613824337 | Simon & Brown 2014          |
| Furuya, U.<br>ISBN-10: 15911603 | Short Cuts, Vol. 1<br>16  | VIZ Media LLC; 1st Ed. 2002 |

Instructor:Jervey TervalonTime:Friday 11:30pm- 2:20pmPlace:BLDG. 494, Room 160b

## Literature CS 102, Section 1

EC#27854

#### **Prose Workshop**

Focus on production and critique of student writing in prose. Experiments in fiction and non-fiction, including short stories, memoir, personal essays, lyric essays, profiles, and travel writing.

Instructor:Caroline AllenTime:Monday and Wednesday 1:00pm- 2:20pmPlace:BLDG. 494, Room 160b

#### Literature CS 101, Section 1

## **Prose Poetry Workshop**

This course will be workshop-oriented, meaning you'll present your original poetry to the class for careful discussion. We'll focus on crafting "prose poems," though will write some lineated poetry, too. Over the course of the quarter you'll read deeply, write, participate in seminar-style discussions, workshop twice, and turn in a portfolio of 12 poems during finals week.

| Required Text<br>Milosz, C.<br>ISBN: 978-037452 | <i>Road-side Dog; reprint edition</i><br>6238 978-0374526238 | Farrar, Straus, and Giroux             |
|---|--|--|
| Levertov,D<br>ISBN: 978-081121                  | New and Selected Essays 2182                                 | New Directions                         |
| Jimenez, J.R.<br>ISBN: 978-029276               | Platero and I (translated by Eloise Roach)<br>4798           | University of Texas Press (reprint ed) |
| Young, G.<br>ISBN:978-193521                    | Even So (New and Selected Poems)<br>0337                     | White Pine Press                       |

| Instructor: | Teddy Macker                         |
|-------------|--------------------------------------|
| Time:       | Tuesdays and Thursday 1:00am- 2:20pm |
| Place:      | BLDG. 494, Room 143                  |

#### EC#27821

#### Literature CS 105, Section 1

EC#27946

#### Literature Symposium

Every quarter various poets, novelists, short story writers, journalists, playwrights, cartoonists, editors, publishers, filmmakers, and critics will present their work at the weekly CCS Literature Symposium. Students who attend all 10 meetings will receive 1 unit of college credit. If you miss the first day of symposium on Wednesday, January 6<sup>th</sup>, you must talk to Caroline Allen in order to remain enrolled for credit. The symposium is open to the community. Students who are not enrolled in the class are welcome to come to symposia that interest them.

Important Etiquette: Students should be in the Old Little Theatre no later than 4 o'clock. Students should sit in the first half of the seating area—no back row sleepers or doers of crossword puzzles! Do not leave before the end of the symposium. Our readers come here to give you the best of themselves. Please be courteous and attentive.

If you need special assistance due to a disability, please call 893-2364.

Instructor:Caroline AllenTime:Wednesday, 4:00 pm - 5:15 pmPlace:The Old Little Theater

# Literature CS 111, Section 1

#### EC#28001

#### What Happens in Yoknapatawpha County Stays in Yoknapatawpha County

We'll be looking at the construction of William Faulkner's "apocryphal county," its geography, its history, its cultures, and its people. We'll be reading close both a selection of his earlier, much-read texts that are thought to be central to his work and through a selection of his later, less-canonical but still-phenomenally-fascinating texts that flesh out the boundaries-geographical, temporal, and otherwise-of Faulkner's "little postage stamp of native soil." We'll be looking at Faulkner's continuing revisions and refinements of the history and mythology of Yoknapatawpha County and the re-inscription of stories that recur throughout Faulkner's career in his world- (well ... county-) building exercise, looking at how his earlier concerns during his formally experimental high modernist period continue into the mature narratives of his later work, just as his packet of fictional land is connected inextricably to the symbolics, the history, and the culture of the "real" (in whatever senses we take that word to have meaning) American South. Course work will involve a reading journal that will be shared and commented upon, two short essays, and a final project.

#### **Prerequisites**:

Interest in construction of fictional geographies. Passion for fine writing.

| <b>Required Text:</b><br>Faulkner, W.<br>ISBN 978-0-679-74814-4 | Sanctuary         | Vintage International |
|---|-------------------|-----------------------|
| Faulkner, W.<br>ISBN 978-0679732266                             | Light in August   | Vintage International |
| Faulkner, W.<br>ISBN 978-0-679-73218-1                          | Absalom, Absalom! | Vintage International |
| Faulkner, W.<br>ISBN 978-0-679-73653-0                          | The Hamlet        | Vintage International |
| Faulkner, W.<br>ISBN 978-0307946805                             | Requiem for a Nun | Vintage International |
| Faulkner, W.<br>ISBN 978-0-307-94681-2                          | The Town          | Vintage International |

Instructor:Patrick MooneyTime:Tuesday and Thursday 4:00pm- 5:20pmPlace:BLDG. 494, Room 160b

#### Literature CS 114, Section 1

#### Literature of Southern California

In this class, students will read prose and poetry about Southern California and by authors associated with the region. Our inquiry will focus on understanding how writers use place to make meaning. We will explore the natural, man-made, and cultural environments that shape the literature of the region and consider how that literature shapes the environment in turn.

| ISBN: 2006 9780470<br>Butler, O.E. | The Parable of the Sower   | Grand Central Publishing |
|------------------------------------|--|--------------------------|
| Hernandez, J.<br>ISBN: 97815609785 | <i>The Girl from H.O.P.P.E.R.S.: A Love and Rockets Book</i><br>10 | Fantagraphics            |
| Instructor:                        | Kara Mae Brown   |                          |

# Instructor:Kara Mae BrownTime:Monday and Wednesday 2:30pm- 4:20pmPlace:BLDG. 494, Room 160b

EC#28159

# College of Creative Studies Summer 2016 Course Offerings

#### Literature CS 101, Section 1 EC#09464

# **Creative Nonfiction Workshop**

Creative Nonfiction Workshop gives students the opportunity to work on short forms of creative nonfiction in a workshop setting. Students will also read examples of contemporary creative nonfiction and research creative nonfiction markets.

#### **Required Textbooks:**

Gutkind, L You Can't Make This Stuff Up: The Complete Guide to Writing Creative Nonfiction Capo Lifelong Books ISBN 978-0738215549

| Instructor: | Kara Mae Brown                   |
|-------------|----------------------------------|
| Time:       | Monday - Thursday 3:00pm- 4:20pm |
| Place:      | BLDG. 494, Room 143              |