This document lists the required and optional textbooks for Caltech courses offered during the FA 2020-21 term. Not all courses are listed. Only those courses for which the Registrar has solid information are listed.

This document is updated as more information comes in from instructors.

Please consult the Library Catalog (TIND) to view class course reserves. Course reserves are available in the Sherman Fairchild Library only. Reserve material is available for 3-hour checkout.

Changes in the last 7 days

No changes.
AEROSPACE
APPLIED & COMPUTATIONAL MATH

ACM/IDS 101A. Methods of Applied Mathematics.

Instructor: Oscar Bruno

Required textbooks:

APPLIED PHYSICS
ASTROPHYSICS


Instructor: Evan Kirby

Required textbooks:

Ay 121. Radiative Processes.

Instructor: Vikram Ravi

Required textbooks:

Ay 123. Structure and Evolution of Stars.

Instructors: Andrew Howard, Dimitri Mawet

Required textbooks:
**BIOLOGY**

**Bi 122. Genetics.**  
**Instructors:** Bruce Hay, Paul Sternberg

**Required textbooks:**  
Griffiths, Anthony, Doebley, John, Peichel, Catherine, Wassarman, David; *Introduction to Genetic Analysis*, . .  
ISBN: 1319114784

**Bi 145A. Tissue and Organ Physiology.**  
**Instructor:** Carol Tydell

**Required textbooks:**  

**BUSINESS, ECONOMICS, AND MANAGEMENT**

**BEM102. Introduction to Accounting.**  
**Instructor:** Peter McAniff

**Required textbooks:**  

**BEM105. Options.**  
**Instructor:** Jaksa Cvitanic

**Required textbooks:**  

**Notes for students:**  
The book by Cvitanic and Zapatero is the main textbook for the course. You don’t have to buy it, but you may have to borrow it every now and then. The book by Shreve contains more advanced material, that is covered in another course.
CHEMICAL ENGINEERING

ChE/Ch 165. Chemical Thermodynamics.

Instructor: Zhen-Gang Wang

Required textbooks:

CHEMISTRY

Ch 001A. General Chemistry.

Instructor: Nathan Lewis

Required textbooks:


Notes for students:
Feel free to use the 8th edition. However, please note that the page references on the schedule in the course syllabus will be towards the 6th edition. You may obtain an electronic version of the 8th edition, if you prefer.

Ch 021A. Physical Chemistry.

Instructor: Mitchio Okumura

Required textbooks:
McQuarrie, Donald; Quantum Chemistry (2nd), University Science Books, 2007. ISBN: 9781891389504


Schrier, Joshua; Introduction to Computational Physical Chemistry (1st), University Science Books, 2017. ISBN: 9781938787904

Orzel, Chad; How to Teach Quantum Physics to Your Dog (1st), Scribner, 2010. ISBN: 9781416572299

Ch 041A. Organic Chemistry.

Instructor: Robert Grubbs

Required textbooks:
Ch 125A. The Elements of Quantum Chemistry.

Instructor: Scott Cushing

Required textbooks:

Ch/Bi 110. Introduction to Biochemistry.

Instructor: William Clemons

Required textbooks:

COMPUTER SCIENCE

CS/EE/IDS 143. Communication Networks.

Instructors: Steven Low, Claire Ralph

Required textbooks:

CS/IDS 150A. Probability and Algorithms.

Instructor: Leonard Schulman

Suggested textbooks:
Ec 011. Introduction to Economics.

**Instructor:** Charles Plott

**Required textbooks:**


Ec 121A. Theory of Value.

**Instructors:** Kim Border, Kota Saito

**Required textbooks:**


Ec 122. Econometrics.

**Instructor:** Robert Sherman

**Required textbooks:**


EE 111. Signal-Processing Systems and Transforms.

**Instructor:** Palghat Vaidyanathan

**Required textbooks:**


EE/Ma/CS 126A. Information Theory.
Instructor: Michelle Effros

**Required textbooks:**

Cover & Thomas; *Elements of Information Theory*, ISBN: 9780-471241959

**Suggested textbooks:**

Gallager; *Information Theory and Reliable Communication*, ISBN: 9780-471290483


**Notes for students:**

There is a library ebook available for *Elements of Information Theory*. Please use the link in this catalogue record to access the Wiley ebook - https://caltech.tind.io/record/752672?ln=en

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**ENGINEERING**

**E 110. Principles of University Teaching and Learning in STEM.**

Instructor:

**Suggested textbooks:**


**Notes for students:**

The required and suggested books are all available as ebooks, either through the Caltech library or on an external site.

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**ENGLISH**

**En 145. Literary Constructions of Motherhood.**

Instructor: Julia Hori

**Required textbooks:**


Tagaq, Tanya; *Split Tooth*, Viking, ISBN: 9780143198048


Bechdel, Alison; *Are You My Mother?*, First Mariner, ISBN: 9780547524368

Vuong, Ocean; *On Earth We're Briefly Gorgeous*, Penguin, ISBN: 9780525562023


En 190. Chaucer.

Instructor: Jennifer Jahner

**Required textbooks:**


En/VC 108. Volcanoes.

Instructor: Anne Sullivan

**Required textbooks:**


Notes for students:

Please purchase or borrow the Broadview Press 3rd edition of _Frankenstein: the original 1818 text_ (edited by D. L. MacDonald and Kathleen Scherf). Please note: the 1818 version of Frankenstein by Broadview is substantially different from the 1831 version of the novel, which many other publishers use instead.

ENVIRONMENTAL SCIENCE & ENGINEERING

FRESHMAN SEMINARS


Instructor: Jehoshua Bruck

**Required textbooks:**


Instructor: Joann Stock

**Required textbooks:**


Instructor: Hugh Politzer

Required textbooks:
Deutsch, Diana; *Musical Illusions and Phantom Words ((1st)),* Oxford University Press, 2019. ISBN: 9780190206833

Notes for students:
eBook versions of “This Is Your Brain...” and “Musical Illusions...” are available at Caltech for streaming or downloading from the Caltech Library once you are registered as a student. Musical Illusions is $35 as a hardcover -- and a treasure. Inexpensive paperback versions of “This Is Your Brain...” are widely available, new or used. There are updated editions, but the first one would be fine. You choose. “Perfecting Sound...” is a paperback. Caltech does not, as yet, have a digital version. We'll only be reading it after the other two. So you can wait before you buy one -- or just go ahead. (Personally, I prefer reading print off of paper.) The long list of Reserves at the Library (which may or may not appear in your version of course books) was an integral part of the course offered in person. This Fall, I do not now who, if anyone will be able to access it. So it is not an essential part of this term's course.

GEOLOGY

Ge 101. Introduction to Geology and Geochemistry.

Instructor: Brian Wernicke

Required textbooks:
Grotzinger JP, Jordan TH; *Understanding Earth (7),* Freeman, 2014. ISBN: 978-1464175084

Ge 114A. Mineralogy.

Instructor: George Rossman

Suggested textbooks:
HISTORY

HISTORY AND PHILOSOPHY OF SCIENCE


Instructor: Charles Kollmer

Required textbooks:


HPS/PI 123. Introduction to the Philosophy of Physics.

Instructor: Mario Georg Hubert

Required textbooks:


HUMANITIES

Hum/En 020. The Epic Tradition.

Instructor: George Pigman

Required textbooks:


Hum/En 021. Monsters and Marvels.

Instructor: Jennifer Jahner

Required textbooks:

Hum/H 009B (Section 1). European Civilization: Early Modern Europe.

Instructor: Philip Hoffman

Required textbooks:

Hum/H 009B (Section 2). European Civilization: Early Modern Europe.

Instructor: Philip Hoffman

Required textbooks:


Instructor: Warren Brown

Required textbooks:
Hum/H 012. Social Theory.

Instructor: Maura Dykstra

Required textbooks:

Suggested textbooks:
Jalil Muntaqim; We are our own liberators : selected prison writings, Portland, OR : Arissa Media Group, 2010. ISBN: 1936900025
Huey P Newton; David Hilliard; Donald Weise; Elaine Brown; The Huey P. Newton reader , New York : Seven Stories Press, 2019. ISBN: 9781609809003


Instructor: Charles Kollmer

Required textbooks:
Hum/VC 049. Consuming Victorian Media.
Instructor:

Required textbooks:


Notes for students:

INFORMATION AND DATA SCIENCES

IDS/Ec/PS 126. Applied Data Analysis.
Instructor: Jonathan Katz

Required textbooks:


LANGUAGE

L 102A. Elementary French.
Instructor: Christiane Orcel

Required textbooks:


L 106A (Section 1). Elementary Japanese.
Instructor: Megumi Fujio

Required textbooks:

Ritsuko Hirai; First Year Japanese (6), Pearson, ISBN: 9781323419014
L 106A (Section 2). Elementary Japanese.

Instructor: Megumi Fujio

Required textbooks:
Ritsuko Hirai; *First Year Japanese Workbook (7)*, Pearson, ISBN: 9781323587829
Ritsuko Hirai; *First Year Japanese (6)*, Pearson, ISBN: 9781323419014

L 110A (Section 1). Elementary Spanish.

Instructor: Gloria Arjona

Required textbooks:

Notes for students:
We will use one textbook [JUNTOS] during the whole academic year. You have several purchase and rental options. Please make sure to select the proper one according to the number of terms you're planning to take elementary Spanish. The option listed at the Caltech Bookstore is for those students who plan to take three terms and want a printed copy of the textbook. For all the options, visit:

L 110A (Section 2). Elementary Spanish.

Instructor: Daniel Garcia

Required textbooks:

Notes for students:
We will use one textbook [JUNTOS] during the whole academic year. You have several purchase and rental options. Please make sure to select the proper one according to the number of terms you're planning to take elementary Spanish. The option listed at the Caltech Bookstore is for those students who plan to take three terms and want a printed copy of the textbook. For all the options, visit:

L 112A. Intermediate Spanish.

Instructor: Gloria Arjona
Required textbooks:

L 130A. Elementary German.
Instructor: Andreas Aebi

Required textbooks:

Notes for students:
Text is interactive - students must sign up with publisher for text and work access - and for contact with instructor - same book will be used for all 3 quarters

L 132A. Intermediate German.
Instructor: Andreas Aebi

Required textbooks:
Antoniuk, David, Forester Lee; *Weiter geht's (3rd)*, live oak multimedia - evia learning, 2019/20. ISBN: 978-1-886553-08-8

Notes for students:
Book is mandatory - students also must sign up for interactive publisher access - same book will be used for all 3 quarters

L 170A. Introduction to Chinese.
Instructor: Xiangyun Wang

Required textbooks:

Notes for students:
Students have the option to buy the e-edition of this book. There is also a version of the traditional Chinese characters. Students can use the traditional ones instead if preferred.
L 172A. Intermediate Chinese.
Instructor: Xiangyun Wang

**Required textbooks:**

**Notes for students:**
Students have the option to buy the e-edition of this book.

L/VC 109. Introduction to French Cinema from Its Beginning to the Present.
Instructor: Christiane Orcel

**Required textbooks:**

MATERIALS SCIENCE

Instructor: Katherine Faber

**Required textbooks:**

**Suggested textbooks:**

MS 132. Diffraction and Structure.
Instructor: Brent Fultz

**Required textbooks:**
Brent Fultz and James Howe; *Transmission Electron Microscopy and Diffractometry of Materials (Fourth)*, Springer, 2013. ISBN: 978-3-642-29760-1

MATHEMATICS
Ma 001A. Calculus of One and Several Variables and Linear Algebra.
Instructor: Nets Katz

Required textbooks:

Ma 002 (Practical). Differential Equations.
Instructor: Lu Wang

Required textbooks:

Ma 005A. Introduction to Abstract Algebra.
Instructor: Thomas Graber

Required textbooks:
Dummit, David, Foote, Richard; Abstract Algebra (3rd), ISBN: 0471433349

Ma 102 (Practical). Differential Equations.
Instructor: Lu Wang

Required textbooks:

Ma 108A. Classical Analysis.
Instructor: Alexander Dunn

Required textbooks:
Rudin, Walter; Principles of Mathematical Analysis (3), ISBN: 978-0070542358
Ma 109A. Introduction to Geometry and Topology.

Instructor: Peter Smillie

**Required textbooks:**

Ma 120A. Abstract Algebra.

Instructor: Anna Szumowicz

**Required textbooks:**
Matsumura, H.; *Commutative Ring Theory*, . ISBN: 978-0521367646

Ma 130A. Algebraic Geometry.

Instructor: Thomas Graber

**Suggested textbooks:**
Shafarevich, Igor; *Basic Algebraic Geometry I*, . ISBN: 978-3-642-37956-7
Harris, Joe; *Algebraic Geometry: A First Course*, . ISBN: 0387977163

Ma 157A. Riemannian Geometry.

Instructor: Lu Wang

**Required textbooks:**

**Suggested textbooks:**

Ma/ACM 142A. Ordinary and Partial Differential Equations.

Instructor:

**Suggested textbooks:**
MECHANICAL ENGINEERING

MUSIC

Mu 051. Understanding Music.

Instructor: Thomas Neenan

Required textbooks:
Kerman, Joseph; Listen (9th), Norton, . ISBN: 978-0-393-69600-4

PHYSICS

Ph 002A. Waves, Quantum Mechanics, and Statistical Physics.

Instructor: Frank Porter

Required textbooks:

Ph 106A. Topics in Classical Physics.

Instructor: James Fuller

Required textbooks:

Ph 125A. Quantum Mechanics.

Instructor: Mark Wise

Suggested textbooks:

Notes for students:
I follow parts of this text closely but additional material is added and of course some of it is left out. One should think of PH125a and b as covering a good portion of the material in this text.
Ph 127A. Statistical Physics.
Instructor: Olexei Motrunich

*Required textbooks:*

Ph 136A. Applications of Classical Physics.
Instructor: E Phinney

*Required textbooks:*

Ph 230A. Elementary Particle Theory.
Instructor: Kathryn Zurek

*Required textbooks:*

**SOCIAL SCIENCE**

SS 202A. Political Theory.
Instructor: Alexander Hirsch

*Required textbooks:*
Austen-Smith, David, Banks, Jeffrey S; *Positive political theory I: collective preference*, ISBN: 0472087215

SS 205A. Foundations of Economics.
Instructors: Kim Border, Federico Echenique

*Required textbooks:*

**Suggested textbooks:**


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**SS 213A. Financial Economics.**

**Instructor:** Jaksa Cvitanic

**Required textbooks:**

Steven E. Shreve; *Stochastic Calculus for Finance II: Continuous-Time Models*, ISBN: 978-0387401010

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**WRITING**

**Wr 002 (Section 1). Introduction to Academic Writing.**

**Instructor:** Susanne Hall

**Required textbooks:**


Harris, Joseph; *Rewriting: How to do things with texts (2nd)*, Utah State UP, 2017. ISBN: 978-1607326861