Book Adoptions for FA 2019-20
Prepared Tuesday, September 03, 2019

This document lists the required and optional textbooks for Caltech courses offered during the FA 2019-20 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.

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</table>
ACM/IDS 101A. Methods of Applied Mathematics.

Instructor: Oscar Bruno

**Required textbooks:**


**Suggested textbooks:**


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**ASTROPHYSICS**

Ay 020. Basic Astronomy and the Galaxy.

Instructor: Vilupanur Ravi

**Required textbooks:**

Carroll, Bradley W,Ostlie, Dale A; *An Introduction to Modern Astrophysics*, ISBN: 0805304029

Ay 121. Radiative Processes.

Instructor: E Phinney

**Required textbooks:**


**Suggested textbooks:**


Ay 123. Structure and Evolution of Stars.

Instructors: Lynne Hillenbrand, Evan Kirby

**Required textbooks:**

**Suggested textbooks:**
Gray, David; *The Observation and Analysis of Stellar Photospheres*, ISBN: 0-521-06681-6

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**BIOENGINEERING**

**BIOLOGY**

Bi 122. Genetics.
Instructor: Paul Sternberg

*Required textbooks:*

Bi/Ch 110. Introduction to Biochemistry.
Instructor: William Clemons

*Required textbooks:*

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**BUSINESS, ECONOMICS, AND MANAGEMENT**

BEM105. Options.
Instructor: Jaksa Cvitanic

*Required textbooks:*

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**CHEMICAL ENGINEERING**

ChE103A. Transport Phenomena.
Instructor: Julia Kornfield

*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.

COMPUTER SCIENCE

ECONOMICS

Ec 011. Introduction to Economics.

Instructor: Charles Plott

Required textbooks:


Ec 122. Econometrics.

Instructor: Robert Sherman

Required textbooks:


ELECTRICAL ENGINEERING

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

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**ENGINEERING**

E 110. Principles of University Teaching and Learning in STEM.
Instructor: Cassandra Horii

**Required textbooks:**

**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 180. Special Topics in English: American Literature of the Environment.
Instructor: Stefanie Sobelle
**Required textbooks:**


**Suggested textbooks:**

Amitav Ghosh; *The Great Derangement: Climate Change and the Unthinkable*, University of Chicago Press, 2017. ISBN: 9780226526812

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**En 183. Victorian Crime Fiction.**

**Instructor:** Dehn Gilmore

**Required textbooks:**

wilkie collins; *The Moonstone*, . ISBN: 9780199536726

mary elizabeth braddon; *Lady Audley's Secret*, . ISBN: 9780199537242

wilkie collins; *Law and the Lady*, . ISBN: 9780140436075

arthur conan doyle; *Adventures and Memoirs of Sherlock Holmes*, . ISBN: 978-0140437713

dickens, charles; *Oliver Twist*, . ISBN: 978-0141439747

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**En/VC 108. Volcanoes.**

**Instructor:** Anne Sullivan

**Required textbooks:**


**Notes for students:**

Please purchase or borrow the Penguin Classics edition of M. P. Shiel's *The Purple Cloud* published in 2012 (edited by John Sutherland). And, 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.
FRESHMAN SEMINARS

FS/ESE/Ge 018. Freshman Seminar: The Unseen Microbial World in Plain Sight.
Instructor: Jared Leadbetter

Required textbooks:

Instructor: Hugh Politzer

Required textbooks:

Notes for students:
An eBook version of “This Is Your Brain...” is available at Caltech once you register in the Fall. However, inexpensive paperback versions are widely available, new or used. There are updated editions, but the first one would be fine. You choose.

GEOLOGY

Ge 114A. Mineralogy.
Instructor: George Rossman

Suggested textbooks:

Notes for students:
earlier editions also work well.

Instructor: Paul Asimow

Required textbooks:
HISTORY

H 135. War, Conquest, and Empires.

Instructor: Philip Hoffman

Required textbooks:

H 150. America in the 1960s.

Instructor: Michael Savage

Required textbooks:

HISTORY AND PHILOSOPHY OF SCIENCE

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

Instructor: Charles Sebens

Required textbooks:

HUMANITIES

Hum/En 020. Greek Epic and Drama.

Instructor: George Pigman
Required textbooks:
Homer; *The Iliad*, . ISBN: 9780140275360
Mary Lefkowitz and James Romm; *The Greek Plays*, . ISBN: 978-0812983098

Hum/H 001 (Section 1). American History.
Instructor: J. Kousser

Required textbooks:

Hum/H 001 (Section 2). American History.
Instructor: J. Kousser

Required textbooks:

Hum/H 003. The United States in the Twentieth Century.
Instructor: Michael Savage

Required textbooks:

Hum/Pl 041. Knowledge and Reality.
Instructor: Mario Georg Hubert

**Required textbooks:**
- Sextus Empiricus; *Selections from the Major Writings on Scepticism, Man, and God*, Hackett, 1985. ISBN: 087220006X

**Hum/VC 049. Consuming Victorian Media.**

Instructor: Anne Sullivan

**Required textbooks:**

Notes for students:

**Hum114A. Spanish and Latin American Literature.**

Instructor: Gloria Arjona

**Required textbooks:**
- Chang-Rodríguez, Raquel; *Voces de Hispanoamérica (5th)*, Cengage, 2017. ISBN: 9781305584488

**LANGUAGES**

**L 102A. Elementary French.**

Instructor: Christiane Orcel

**Required textbooks:**

Notes for students:
The e-books are also fine.
Instructor: Megumi Fujio

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

L 110A (Section 1). 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: https://www.cengage.com/c/mindtap-for-juntos-student-edition-1e-rubio/

L 110A (Section 2). Elementary Spanish.
Instructor: Gloria Arjona

Required textbooks:

L 112A. Intermediate Spanish.
Instructor: Daniel Garcia

Required textbooks:

Notes for students:
We will use one textbook [Rutas] 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. For all the options, visit: https://www.cengage.com/c/rutas-intermediate-spanish-1e-velardi/

**L 114A. Spanish and Latin American Literature.**

**Instructor:** Gloria Arjona

**Required textbooks:**
Chang-Rodríguez, Raquel; *Voces de Hispanoamérica (5th)*, Cengage, 2017. ISBN: 1305584481

**L 170A. Introduction to Chinese.**

**Instructor:** Xiangyun Wang

**Required textbooks:**

**Notes for students:**
The textbook and workbook listed here are written in simplified Chinese characters. If you prefer to learn the traditional Chinese characters, you may buy books with the same booktitle but different ISBN. It is okay to use the digital version.

**L 172A. Intermediate Chinese.**

**Instructor:** Xiangyun Wang

**Required textbooks:**

**Notes for students:**
You may use the digital version of the textbook and workbook listed here.

**L/VC 109. Introduction to French Cinema from Its Beginning to the Present.**

**Instructor:** Christiane Orcel

**Required textbooks:**
**MATERIALS SCIENCE**

**MS 132. Diffraction and Structure.**

**Instructor:** Brent Fultz

**Required textbooks:**


**Notes for students:**


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**MATHMATICS**

**Ma 001A. Calculus of One and Several Variables and Linear Algebra.**

**Instructor:** Dinakar Ramakrishnan

**Required textbooks:**

Apostol, T; *Calculus Volume*, . ISBN: 978-0471000051

**Ma 001A (Section 1). Calculus of One and Several Variables and Linear Algebra.**

**Instructor:** Dmitri Gekhtman

**Required textbooks:**

Apostol, Tom M; *Calculus*, . ISBN: 0-471-00005-1

**Ma 002 (Analytical). Differential Equations.**

**Instructor:**

**Required textbooks:**

Robinson, James; *An Introduction to Ordinary Differential Equations*, . ISBN: 0521533910
Ma 002 (Practical). Differential Equations.
Instructor:

Required textbooks:

Ma 005A. Introduction to Abstract Algebra.
Instructor: Matthias Flach

Required textbooks:
Dummit, Foote; Abstract Algebra, ISBN: 0471433349

Ma 108A. Classical Analysis.
Instructor: Kirill Lazebnik

Required textbooks:
Rudin, Walter; Principles of Mathematical Analysis (3), ISBN: 978-0070542358

Ma 120A. Abstract Algebra.
Instructor: Dinakar Ramakrishnan

Required textbooks:
Lang, Serge; Algebra, ISBN: 978-0387953854

PHYSICS

Ph 001A. Classical Mechanics and Electromagnetism.
Instructor: Clifford Cheung

Required textbooks:
Ph 002A. Waves, Quantum Mechanics, and Statistical Physics.

Instructor: Frank Porter

Required textbooks:

Ph 003. Introductory Physics Laboratory.

Instructors: Eric Black, Kenneth Libbrecht

Required textbooks:

Ph 012A. Waves, Quantum Physics, and Statistical Mechanics.

Instructor: Xie Chen

Suggested textbooks:
Georgi, Howard; *The physics of waves*, . ISBN: 0136656218
Crawford, Frank S; *Waves*, . ISBN: 978-0070048607
French, A. P.; *Vibrations and waves*, . ISBN: 0393099245

Ph 106A. Topics in Classical Physics.

Instructor: Alan Weinstein

Required textbooks:

Ph 127A. Statistical Physics.

Instructor: Olexei Motrunich

Required textbooks:
Ph 135. Introduction to Condensed Matter.
Instructor: Gil Refael

**Required textbooks:**

**Suggested textbooks:**

Ph 205A. Relativistic Quantum Field Theory.
Instructor: Sergei Gukov

**Required textbooks:**
Srednicki, Mark Allen; *Quantum field theory*, ISBN: 9780521864497

Ph 229A. Advanced Mathematical Methods of Physics.
Instructor: Anton Kapustin

**Required textbooks:**
Nash, Charles, Sen, Siddhartha; *Topology and geometry for physicists*, ISBN: 978-0486478524

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

**Required textbooks:**

Ph 236A. Relativity.
Instructor: Yanbei Chen


**Required textbooks:**

Carroll, Sean M.; *Spacetime and geometry: an introduction to general relativity*, ISBN: 0805387323


Wald; *General Relativity*, ISBN: 978-0226870335

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**VISUAL CULTURE**

**VC 170. Special Topics in Visual Culture: Fabricating LA.**

**Instructor:** Stefanie Sobelle

**Required textbooks:**


Joan Didion; *Play it As it Lays (2nd edition)*, FSG Classics, 2005. ISBN: 0374529949


Nathanael West; *Miss Lonelyhearts & The Day of the Locust (Paperback)*, New Directions, 2009. ISBN: 0811218228


**Suggested textbooks:**

Mike Davis; *City of Quartz*, Verso, 2006. ISBN: 1844675688