This document lists the required and optional textbooks for Caltech courses offered during the WI 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.

**Changes in the last 7 days**

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ANTHROPOLOGY

An 014. Introduction to Sociocultural Anthropology.

Instructor: Jean Ensminger

Required textbooks:

An/PS 127. Corruption.

Instructor: Jean Ensminger

Required textbooks:

APPLIED & COMPUTATIONAL MATH

ACM/IDS 101B. Methods of Applied Mathematics.

Instructor: Oscar Bruno

Suggested textbooks:

Notes for students:
The use of the texts is recommended but optional.

ASTROPHYSICS

Ay 021. Galaxies and Cosmology.

Instructor: Charles Steidel

Required textbooks:
Schneider, Peter; *Extragalactic Astronomy and Cosmology* (2nd), Springer, 2015. ISBN: 978-3642540820
Notes for students:

Note that this book is freely available to Caltech students in electronic form; see https://caltech.tind.io//record/898817?ln=en

Ay 102. Physics of the Interstellar Medium.

Instructor: Lynne Hillenbrand

**Required textbooks:**


**Suggested textbooks:**


Ay 122B. Astronomical Measurements and Instrumentation.

Instructors: Gregg Hallinan, Vikram Ravi

**Suggested textbooks:**


BIOENGINEERING

BE/APh 161. Physical Biology of the Cell.

Instructor: Robert Phillips

**Required textbooks:**


BIOLOGY

Bi 008. Introduction to Molecular Biology: Regulation of Gene Expression.
**Instructors**: Mitchell Guttman, Elizabeth Hong

**Suggested textbooks:**

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**Bi 114. Immunology.**

**Instructors**: Pamela Bjorkman, Mary Yui

**Required textbooks:**
K. Murphy, P. Travers, M. Walport; *Janeway’s Immunobiology* (8), Current Biology, 2004. ISBN: 9780815345053

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**Bi/CNS/NB 162. Cellular and Systems Neuroscience Laboratory.**

**Instructor**: Lindsay Bremner

**Suggested textbooks:**

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**Bi/Ch 111. Biochemistry of Gene Expression.**

**Instructors**: Judith Campbell, Carl Parker

**Required textbooks:**

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**Bi/Ge/ESE 105. Evolution.**

**Instructors**: Victoria Orphan, Robert Phillips

**Required textbooks:**
CHEMICAL ENGINEERING

Instructor: Rustem Ismagilov

Required textbooks:
Folch, Albert; Introduction to BioMems, ISBN: 1439818398

Suggested textbooks:

ChE063A. Chemical Engineering Thermodynamics.
Instructor: Richard Flagan

Required textbooks:
Milo D. Koretsky; Engineering and Chemical Thermodynamics (2nd), ISBN: 9780470259610

CHEMISTRY

Ch 021B. Physical Chemistry.
Instructor: Lu Wei

Required textbooks:
Griffiths, David J.; Introduction to Quantum Mechanics (2nd), ISBN: 9781107179868
Atkins, Peter W., and Freedman, Ronald S.; Molecular Quantum Mechanics (5th), ISBN: 9780199541423

COMPUTATION & NEURAL SYS

CNS/Psy/Bi 102A. Brains, Minds, and Society.
Instructors: Ralph Adolphs, John O'Doherty

Required textbooks:
COMPUTER SCIENCE

CS 021. Decidability and Tractability.
Instructor: Christopher Umans

Required textbooks:

ELECTRICAL ENGINEERING

EE 112. Introduction to Signal Processing from Data.
Instructor: Palghat Vaidyanathan

Required textbooks:

EE/Ma/CS 126B. 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

ENGLISH

En 086. Fiction and Creative Nonfiction Writing.
Instructor: Merrill Gerber

Required textbooks:
Notes for students:

Please read a story or an essay or one of each—to see which form appeals to you.


Instructor: Catherine Jurca

Required textbooks:

James, Henry; *Portrait of a Lady (First)*, Norton, 2017. ISBN: 9780393938531

Notes for students:

It is essential that you buy these editions of the required books. Not all books with the title Portrait of a Lady or Sister Carrie are the same. They need to be physical books rather than e-books that you can bring to class with you.

En 127. Jane Austen.

Instructor: Kevin Gilmartin

Required textbooks:

Jane Austen; *Northanger Abbey*, Penguin, . ISBN: 9780141439792
Jane Austen; *Sense and Sensibility*, Oxford, . ISBN: 0198793359

En/VC 117. Picturing the Universe.
Instructor: Anne Sullivan

**Required textbooks:**


Hardy, Thomas; *Two on a Tower*, Penguin, ISBN: 9780140435368

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**GEOLOGY**

Ge/Ay 117. Bayesian Statistics and Data Analysis.

**Instructor:** Heather Knutson

**Required textbooks:**


**Notes for students:**

This book is also available as an Ebook through the Caltech libraries.

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**HISTORY**

H 112. The Vikings.

**Instructor:** Warren Brown

**Required textbooks:**


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**HISTORY AND PHILOSOPHY OF SCIENCE**

HPS/PI 124. Philosophy of Space and Time.

**Instructor:** Mario Georg Hubert

**Required textbooks:**
HUGENUTIES

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 008B. Civilization, Science, and Archaeology: The Development of Science from Babylon though the Renaissance.

Instructor: Jed Buchwald

Required textbooks:


Instructor: Warren Brown

Required textbooks:
Hum015 (Section 1). Special Topics in Humanities.

**Instructor:** Stefanie Sobelle

**Required textbooks:**
- Faulkner, William; *Absalom, Absalom!,* Vintage, . ISBN: 978-0679732181

Hum015 (Section 2). Special Topics in Humanities.

**Instructor:** Stefanie Sobelle

**Required textbooks:**

**Suggested textbooks:**

LANGUAGES

L 102B. Elementary French.

**Instructor:** Christiane Orcel

**Required textbooks:**

L 106B (Section 1). Elementary Japanese.
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 106B (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

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 110B (Section 1). Elementary 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 112B. 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 167. Latin Literature.
Instructor: George Pigman

Required textbooks:

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

Required textbooks:

L 172B. Intermediate Chinese.
Instructor: Xiangyun Wang

Required textbooks:

Instructor: Christiane Orcel

Required textbooks:
- Bessora (Author), Barroux (Illustrator), Sarah Ardizzone (Translator); Alpha: Abidjan to Paris, Bellevue Literary Press, May 2018. ISBN: 978-1942658405
- Ruillier, Jérôme (Author), Dascher, Helge (Translator); The Strange, Drawn and Quarterly, June 2018. ISBN: 978-1770463172
- Calais Writers; Voices from the “Jungle”: Stories from the Calais Refugee Camp, Pluto Press, June 2017. ISBN: 978-0745399706
MATERIALS SCIENCE

MS 131. Structure and Bonding in Materials.

Instructor: Marco Bernardi

Required textbooks:


MATHEMATICS

Ma 003. Introduction to Probability and Statistics.

Instructor: Kim Border

Required textbooks:


Ma 005B. Introduction to Abstract Algebra.

Instructor: Christopher Campbell

Suggested textbooks:


Ma 109B. Introduction to Geometry and Topology.

Instructor: Dmitri Gekhtman

Required textbooks:

Ma 110B. Analysis.
Instructor: Eric Rains

Required textbooks:

Ma 116B. Mathematical Logic and Axiomatic Set Theory.
Instructor: Aristotelis Panagiotopoulos

Suggested textbooks:
Kenneth Kunen; Set Theory An Introduction To Independence Proofs, ISBN: 0444868399

Ma 121A. Combinatorial Analysis.
Instructor: Mykhaylo Tyomkyn

Required textbooks:
Lint, Jacobus Hendricus van, Wilson, R. M. (Richard Michael); A course in combinatorics, ISBN: 0521803403

Ma 130B. Algebraic Geometry.
Instructor: Daxin Xu

Suggested textbooks:

Ma 147B. Dynamical Systems.
Instructor: Kirill Lazebnik

Required textbooks:
Milnor, John; Dynamics in One Complex Variable, ISBN: 978-0691124889
Ma 191B (Section 2). Selected Topics in Mathematics.
Instructor:

Required textbooks:
Alon, Noga, Spencer, Joel H.; The probabilistic method, ISBN: 9781119061953

Instructor: Rupert Frank

Required textbooks:

Ma/CS 006B. Introduction to Discrete Mathematics.
Instructor:

Required textbooks:
West, Douglas Brent; Introduction to graph theory, ISBN: 0130144002
Diestel, Reinhard; Graph Theory, ISBN: 9783642142789

MUSIC

Mu 056. Jazz History.
Instructor: Thomas Neenan

Required textbooks:

Mu 138. History II: Music History from 1750 to 1850.
Instructor: Thomas Neenan

Required textbooks:
Notes for students:
You are strongly encouraged to procure your own copies of the texts. Both texts are available in various formats at SFL for you to access until you procure your own copies. If you chose not to buy your own copies and rely on SFL reserve or electronic copies, you do so at risk of not being able to access the materials when you want.

PHILOSOPHY

PI 100. Free Will.
Instructor: Christopher Hitchcock

Required textbooks:
Pereboom, Derk; *Free Will (2nd)*, Hackett, 2009. ISBN: 978-1-60384-129-0

PHYSICS

Instructor: David Hsieh

Required textbooks:
Helliwell, T.M.; *Special Relativity*, ISBN: 978-1891389610
Purcell, EM, Morin, DJ; *Electricity and Magnetism (3)*, ISBN: 978-1107014022

Ph 002B. Waves, Quantum Mechanics, and Statistical Physics.
Instructor: Clifford Cheung

Required textbooks:
Griffiths, David; *Introduction to Quantum Mechanics*, ISBN: 0-13-111892-7

Ph 106B. Topics in Classical Physics.
Instructor: Sunil Golwala

Required textbooks:

Suggested textbooks:
Ph 129B. Mathematical Methods of Physics.

Instructor: Xie Chen

Required textbooks:

Suggested textbooks:
- Zee, A.; Group Theory in a Nutshell for Physicists, ISBN: 97806911162690
- Raymond, Pierre; Group Theory: A Physicist’s Survey, ISBN: 978-0521896030
- Tung, Wu-Ki; Group Theory in Physics, ISBN: 9971966565
- Georgi, Howard; Lie Algebras in Particle Physics, ISBN: 978-0738202334
- Tinkham, Michael; Group Theory and Quantum Mechanics, ISBN: 9780486432472

Ph/APh 137B. Atoms and Photons.

Instructor: Manuel Endres

Suggested textbooks:
- Grynberg, Gilbert,Aspect, Alain,Fabre, Claude; Introduction to Quantum Optics, ISBN: 978-0521551120
- Gerry, Christopher,Knight, Peter; Introductory Quantum Optics, ISBN: 978-0521527354

Ph/APh 223A. Advanced Condensed-Matter Physics.

Instructor: Jason Alicea

Required textbooks:
- Girvin, Steven M.,Yang, Kun; Modern Condensed Matter Physics, ISBN: 978-1107137394
VISUAL CULTURE

VC 060. Art/Media.

Instructor:

Required textbooks: