Book Adoptions for WI 2019-20
Prepared Wednesday, January 08, 2020

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

Ch 014
Ch 104
Ch 125B
E/H/VC 089
Ge 011D
Ge 102
Ph 127B
AEROSPACE ANTHROPOLOGY

An 014. Introduction to Sociocultural Anthropology.
Instructor: Jean Ensminger

Required textbooks:
Smith Bowen, Elenore; Return to Laughter (1st), Doubleday, 1954. ISBN: 978-0385053129

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.

APPLIED MECHANICS

APPLIED PHYSICS

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

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**Ay 102. Physics of the Interstellar Medium.**

Instructor: Lynne Hillenbrand

**Required textbooks:**


**Suggested textbooks:**


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**Ay 122B. Astronomical Measurements and Instrumentation.**

Instructors: Gregg Hallinan, Vikram Ravi

**Suggested textbooks:**


Notes for students:


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**BIOENGINEERING**

**BE/APh 161. Physical Biology of the Cell.**

Instructor: Robert Phillips
**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:**


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**Bi 117. Developmental Biology.**

**Instructor:** Marianne Bronner Hansen

**Required textbooks:**

Gilbert, Scott, Barresi, Michael; *Development Biology (12)*, 2019. ISBN: 1605358223

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**Bi/BE 182. Animal Development and Genomic Regulatory Network Design.**

**Instructors:** Isabelle Peter Lashgari Faghani, Angelike Stathopoulos

**Suggested textbooks:**

Peter, Isabelle, Davidson, Eric; *Genomic Control Process: development and evolution*, ISBN: 0124047297

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

**Instructor:** Lindsay Bremner
Suggested textbooks:

Bi/Ch 111. Biochemistry of Gene Expression.
Instructors: Judith Campbell, Carl Parker

Required textbooks:

Bi/Ge/ESE 105. Evolution.
Instructors: Victoria Orphan, Robert Phillips

Required textbooks:

BUSINESS, ECONOMICS, AND MANAGEMENT
CHEMICAL ENGINEERING

Instructor: Rustem Ismagilov

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

Suggested textbooks:

ChE/Ch 164. Introduction to Statistical Thermodynamics.
Instructor: Zhen-Gang Wang

Required 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


Instructors: Markus Meister, Pietro Perona, Shinsuke Shimojo, Doris Tsao

Required textbooks:


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:

ECONOMICS

ELECTRICAL ENGINEERING

EE 045. Electronics Systems and Laboratory.

Instructors: Azita Emami, Richard Kalantar Ohanian

Required textbooks:
Tsividis, Yannis; A first lab in circuits and electronics, Wiley, 2002. ISBN: 9780471386957

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
En 086. Fiction and Creative Nonfiction Writing.

Instructor: Merrill Gerber

**Required textbooks:**

Furman, Laura (Editor); *The O. Henry Prize Short Stories 2019: The Best Short Stories of the Year (1st)*, Anchor Books, div. of Random House LLC, 2019. ISBN: 978-0525565536


**Notes for students:**

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

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Instructor: Catherine Jurca

**Required textbooks:**


**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.

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En 127. Jane Austen.

Instructor: Kevin Gilmartin

**Required textbooks:**

En/VC 117. Picturing the Universe.

Instructor: Anne Sullivan

Required textbooks:

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

ENVIRONMENTAL SCIENCE & ENGINEERING

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.

HISTORY

H 112. The Vikings.

Instructor: Warren Brown

Required textbooks:

HISTORY AND PHILOSOPHY OF SCIENCE

HPS/PL 124. Philosophy of Space and Time.

Instructor: Mario Georg Hubert

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 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:**


Hamid, Mohsin; *Exit West*, Riverhead, 2018. ISBN: 978-0735212206


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 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

L 110B (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 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
- Gaudé, Laurent (Author), Hunter, Adriana (Translator); *Eldorado*, MacAdam/Cage, July 2008. ISBN: 978-1596922976

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: Peter Smillie

*Required textbooks:*  

Ma 110B. Analysis.  
Instructor: Eric Rains

*Required textbooks:*  
Simon, Barry; *Comprehensive Course in Analysis, Part 2A*, , . ISBN: 978-1470411008

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: Clara Shikhelman

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: Clara Shikhelman

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

MECHANICAL ENGINEERING
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.

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**NEUROBIOLOGY**

NB/Bi/CNS 163. The Biological Basis of Neural Disorders.
Instructors: Henry Lester, Carlos Lois

**Required textbooks:**
Kandel, Eric; *Principles of Neuroscience (5)*, 2013. ISBN: 0071390111

**PHILOSOPHY**

Pl 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:**
- Purcell, EM, Morin, DJ; *Electricity and Magnetism (3)*, ISBN: 978-1107014022

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**Ph 001B (Practical). Classical Mechanics and Electromagnetism.**

Instructor: Gil Refael

**Required textbooks:**
- Serway, Raymond A., Jewett, John W.; *Physics for Scientists and Engineers (9th)*, ISBN: 978-1133947271

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**Ph 002B. Waves, Quantum Mechanics, and Statistical Physics.**

Instructor: Clifford Cheung

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

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**Ph 106B. Topics in Classical Physics.**

Instructor: Sunil Golwala

**Required textbooks:**

**Suggested textbooks:**

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**Ph 129B. Mathematical Methods of Physics.**

Instructor: Xie Chen

**Required textbooks:**
Suggested textbooks:

Raymond, Pierre; *Group Theory: A Physicist's Survey*, ISBN: 978-0521896030
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:** Jessica Helfand

**Required textbooks:**