

Book Adoptions for FA 2017-18

Prepared Saturday, September 02, 2017

This document lists the required and optional textbooks for Caltech courses offered during the FA 2017-18 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

BE/Bi 103

Bi 122

Bi/BE 024

Ch 001A

Ch 041A

Ch 112

Ch 117

Ch 125A

APPLIED COMPUTATIONAL MATH

ACM101A. Methods of Applied Mathematics I.

Instructor: Oscar Bruno

Suggested textbooks:

Ablowitz, Mark J. and Fokas, Athanassios S.; *Complex Variables: Introduction and Applications (Second Edition)*, . ISBN: 978-0521534291

Bender, Carl M. and Orszag, Steven A.; *Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory*, Springer Verlag, . ISBN: 978-0387989310

Carrier, George F., Krook, Max, and Pearson, Carl E.; *Functions of a Complex Variable: Theory and Technique (Classics in Applied Mathematics)*, SIAM, . ISBN: 978-0898715958

ASTROPHYSICS

Ay 020. Basic Astronomy and the Galaxy.

Instructors: Lynne Hillenbrand, Evan Kirby

Required textbooks:

Bradley W. Carroll; Dale A. Ostlie ; *An Introduction to Stellar Modern Astrophysics (Second Edition)*, Pearson Education Inc, 2006. ISBN: 0805303480

BIOENGINEERING

BE/Bi 103. Data Analysis in the Biological Sciences.

Instructor: Justin Bois

Required textbooks:

Sivia, D. S.; *Data Analysis: A Bayesian Tutorial (2nd)*, Oxford University Press, 2006. ISBN: 9780198568315

BIOLOGY

Bi 122. Genetics.

Instructor: Bruce Hay

Required textbooks:

Griffiths, Anthony J. F.,Wessler, Susan R.,Carroll, Sean B.,Doebley, John F.; *Introduction to Genetic Analysis (11th)*, W.H. Freeman Company, 2015. ISBN: 9781464109485

Bi/Ch 110. Introduction to Biochemistry.

Instructors: Judith Campbell, Carl Parker

Required textbooks:

Berg, Tymoczko, Gatto Stryer; *Biochemistry (8th)*, W.H. Freeman Company, New York, 2015. ISBN: 978-1-4641-2610-9

Suggested textbooks:

Fertuck, Rhodes, Josephy and Koeppe II; *Student Companion to Accompany Biochemistry, 8th Edition*, W.H. Freeman Company (A Macmillan Education Company), New York, 2015. ISBN: 978-1-4641-8803-9

BUSINESS, ECONOMICS, AND MANAGEMENT

BEM105. Options.

Instructor: Jaksa Cvitanic

Required textbooks:

Cvitanic, Jaksa, Zapatero, Fernando; *Introduction to the Economics and Mathematics of Financial Markets (1)*, MIT Press, 2004. ISBN: 0262033208

Suggested textbooks:

Shreve, Steven; *Stochastic Calculus for Finance II: Continuous-Time Models (1)*, Springer Finance, 2004. ISBN: 0387401016

CHEMICAL ENGINEERING

ChE/Ch 165. Chemical Thermodynamics.

Instructor: Zhen-Gang Wang

Required textbooks:

sandler, stanley; *chemical, biochemical engineering thermodynamics (latest)*, wiley, 2006. ISBN: 978-0471661740

ChE015. Introduction to Chemical Engineering Computation.

Instructor: Richard Flagan

Suggested textbooks:

Holly Moore; *MATLAB for engineers (4th)*, Pearson, 2015. ISBN: 9780133485974

ChE103A. Transport Phenomena.

Instructor: Julia Kornfield

Required textbooks:

Bird, R. Byron (Robert Byron), 1924-, Lightfoot, Edwin N., 1925-, Stewart, Warren E., 1924-; *Transport phenomena (Rev. 2nd Ed.)*, , 2007. ISBN: 9780470115398

CHEMISTRY

Ch 001A. General Chemistry.

Instructor: Nathan Lewis

Required textbooks:

Oxtoby, D. W., Gillis, H. P., Campion, A.; *Principles of Modern Chemistry (8th edition) (8th)*, Thomson Brooks/Cole Publishing, 2016. ISBN: 9781305079113

Gray, H.B.; *Chemical Bonds: An introduction to atomic and molecular structure.*, University Science Books, 1994. ISBN: 0935702350

Ch 041A. Organic Chemistry.

Instructor: Dennis Dougherty

Required textbooks:

Loudon, Marc, Parise, Jim; *Organic Chemistry (6th)*, Roberts and Company Publishers, 2016. ISBN: 9781936221349

Ch 125A. The Elements of Quantum Chemistry.

Instructor: Mitchio Okumura

Suggested textbooks:

Shankar, R; *Principles of Quantum Mechanics, 2nd Edition 2nd Edition*, , . ISBN: 978-0306447907

Schrier, Joshua; *Introduction to Computational Physical Chemistry*, , . ISBN: 978-1-938787-90-4

Levine, Ira N.; *Quantum Chemistry*, , . ISBN: 978-0321803450

ECONOMICS

Ec 121A. Theory of Value.

Instructor: Kim Border

Suggested textbooks:

Varian, Hal; *Microeconomic Analysis (3rd)*, Norton, 1992. ISBN: 978-0393957358

Ec 122. Econometrics.

Instructor: Robert Sherman

Required textbooks:

hill, r. carter,griffiths, william e.,lim, guay c.; *principles of econometrics (4th)*, wiley, 2011. ISBN: 978-0-470-62673-3

ELECTRICAL ENGINEERING

EE 111. Signal-Processing Systems and Transforms.

Instructor: Palghat Vaidyanathan

Required textbooks:

Oppenheim, Alan V,Willsky, Alan S.; *Signals and Systems (2nd)*, Prentice Hall, 1996. ISBN: 978-0138147570

EE/Ma/CS 126A. Information Theory.

Instructor: Michelle Effros

Required textbooks:

Cover, T.M.,Thomas, J.A.; *Elements of Information Theory (2nd)*, Wiley, 2006. ISBN: 978-0-471-24195-9

ENGINEERING

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

Instructor: Cassandra Horii

Required textbooks:

- Ambrose, Susan, Bridges, Michael, DiPietro, Michele, Lovett, Marsha, Norman, Marie,; *How Learning Works: 7 Research-Based Principles for Smart Teaching (Any)*, Jossey-Bass, 2010. ISBN: 978-0470484104
- Kober, Nancy; *Reaching Students: What Research Says About Effective Instruction in Undergraduate Science and Engineering*, National Academies Press, 2015. ISBN: 978-0309300438
- Lang, James M.; *Small Teaching: Everyday Lessons from the Science of Learning (Any)*, John Wiley Sons, 2016. ISBN: 9781118944493

ENGLISH

En 102. Origins of Science Fiction.

Instructor: Leah Klement

Required textbooks:

- Cavendish, Margaret; *The Blazing World and Other Writings*, Penguin Classics, 2004. ISBN: 9780140433722
- More, Bacon, Neville (ed. Susan Bruce); *Three Early Modern Utopias*, Oxford World's Classics, 2008. ISBN: 9780199537990
- John Mandeville (ed. Anthony Bale); *The Book of Marvels and Travels*, Oxford World's Classics, 2012. ISBN: 9780199600601
- Le Guin, Ursula K.; *The Left Hand of Darkness*, Ace, 2000. ISBN: 9780441007318

En 139. Reading Resistance in Cold War American Literature.

Instructor:

Required textbooks:

- Demby, William; *Beetlecreek (Banner Books Series)*, University Press of Mississippi, 1998. ISBN: 1578061067
- Hansberry, Lorraine; *A Raisin in the Sun*, Vintage Books for Random House, 2004. ISBN: 0679755330
- McCullers, Carson; *The Member of the Wedding*, Mariner Books, 2004. ISBN: 0618492399
- Okada, John; *No-No Boy*, University of Washington Press, 2014. ISBN: 0295994045

FRESHMAN SEMINARS

FS/Bi 013. Freshman Seminar: In Search of Memory.

Instructor: Jerome Pine

Required textbooks:

- Kandel, Eric; *In search of memory*, Norton, 2006. ISBN: 978-0-393-32937-7

FS/Ge 016. Freshman Seminar: Earthquakes.

Instructor: Joann Stock

Required textbooks:

Musson, Roger; *The million death quake : the science of predicting Earth's deadliest natural disaster (1)*, Palgrave McMillan, 2012. ISBN: 9780230119413

Oppenheimer, Clive; *Eruptions that Shook the World*, Cambridge University Press, 2011. ISBN: 9780521641128

FS/Ph 009. Freshman Seminar: The Science of Music.

Instructor: Hugh Politzer

Required textbooks:

Levitin, Daniel; *This Is Your Brain on Music ((paper))*, Plume/Penguin, 2007. ISBN: 978-0-452-28852-2

GEOLOGY

Ge 114A. Mineralogy.

Instructor: George Rossman

Suggested textbooks:

Cornelis Klein Barbara Dutrow; *The Manual of Mineral Science (23)*, John Wiley Sons, 2008. ISBN: 978-0471-72157-4

Ge 114B. Mineralogy Laboratory.

Instructor: George Rossman

Suggested textbooks:

William D. Nesse; *Introduction to Optical Mineralogy (4th)*, Oxford, 2013. ISBN: 0199846278

Ge 161. Plate Tectonics.

Instructor: Joann Stock

Suggested textbooks:

Schettino, Antonio; *Quantitative Plate Tectonics (1st)*, Springer, 2015. ISBN: 978-3-319-09135-8

Allan Cox and B. R. Hart; *Plate Tectonics: How it works*, Wiley-Blackwell, 1986. ISBN: 978-0-86542-313-8

HISTORY

H 135. War, Conquest, and Empires.

Instructor: Philip Hoffman

Required textbooks:

Andrade, Tonio; *Lost Colony*, Princeton University Press, 2013. ISBN: 0691159572

Keegan, John ; *The Face of Battle*, Penguin, 1983. ISBN: 978-0140048971

Hoffman, Philip; *Why Did Europe Conquer the World?*, Princeton, 2015. ISBN: 978-0691139708

Parker, Geoffrey ; *The Military Revolution (2nd)*, Cambridge , 1996. ISBN: 978-0521479585

Chase, Kenneth ; *Firearms*, Cambridge, 2003. ISBN: 978-0521722407

Hassig, Ross ; *Mexico and the Spanish Conquest*, Oklahoma, 2006. ISBN: 978-0806137933

Diaz del Castillo, Bernal; *The Conquest of New Spain* , Penguin, 1963. ISBN: 978-0140441239

H/HPS 185. Angels and Monsters: Cosmology, Anthropology, and the Ends of the World.

Instructor: Nicolas Wey-Gomez

Required textbooks:

Hesiod; *Works and Days* (ed. David Tandy and Walter C. Neale), University of California Press, 1997. ISBN: 978-0520203846

Plato; *Plato's Cosmology: The Timaeus of Plato* (ed. Francis Cornford), Martino Fine Books, 2014. ISBN: 978-1614276197

Marco Polo; *The Travels of Marco Polo* (ed. Peter Harris), Everyman's Library, 2008. ISBN: 978-0307269133

HUMANITIES

Hum/En 020. Greek Epic and Drama.

Instructor: George Pigman

Required textbooks:

Aeschylus; *Oresteia*, trans. C Collard, , . ISBN: 9780199537815

Aristophanes; *Frogs and Other Plays*, , . ISBN: 978-0192824097

Euripides; *Medea and Other Plays*, , . ISBN: 9780199537969

Euripides; *Orestes and Other Plays*, , . ISBN: 9780199552436

Homer; *The Iliad*, , . ISBN: 9780140275360

Sophocles; *Antigone, Oedipus the King, and Electra*, , . ISBN: 9780199537174

Hum/En 038. Telling Time in American Modernism.

Instructor:

Required textbooks:

Faulkner, William; *Light in August (1st Vintage International)*, Vintage International for Random House, 2011. ISBN: 0679732268

Larsen, Nella; *Passing*, Martino Publishing, 2016. ISBN: 1614270007

Toomer, Jean; *Cane*, Liveright, 2011. ISBN: 0871402106

Hum/H 009B. European Civilization: Early Modern Europe.

Instructor: Nicolas Wey-Gomez

Required textbooks:

Núñez Cabeza de Vaca, Alvar; *Castaways*, University of California Press, 1993. ISBN: 978-0520070639

Yupanqui, Titu Cusi; *History of how the Spaniards arrived in Peru (Dual-Language Edition)*, Hackett Publishing Company, 2006. ISBN: 978-0872208285

Erauso, Catalina de; *Lieutenant Nun: Memoir of a Basque Transvestite in the New World*, Beacon Press, 1997. ISBN: 978-0807070734

Marco Polo; *The Travels of Marco Polo (ed. Peter Harris)*, Everyman's Library, 2008. ISBN: 978-0307269133

Hum/H 010. Medieval Europe: The Problem of Violence.

Instructor: Warren Brown

Required textbooks:

Sheingorn, Pamela; *The Book of Sainte Foy*, University of Pennsylvania, 1995. ISBN: 0812215125

Gregory of Tours, Thorpe, Lewis; *The History of the Franks*, Penguin Classics, 1976. ISBN: 978-0140442953

Warner, David A.; *Ottoman Germany: The Chronicon of Thietmar of Merseburg*, Manchester University Press, 2001. ISBN: 0719049253

Galbert of Bruges, Ross, James Bruce; *The Murder of Charles the Good, Count of Flanders*, Columbia University Press, 2005. ISBN: 0-231-13671-4

Frossart, Jean, Brereton, Geoffrey; *Chronicles*, Penguin, 1978. ISBN: 9780140442007

Hum114A. Spanish and Latin American Literature.

Instructor: Gloria Arjona

Required textbooks:

Renjilian-Burgy, Joy, Valette Rebecca M.; *Album (4th Edition)*, Cengage, 2014. ISBN: 978-1133941040

LANGUAGES

L 102A. Elementary French.

Instructor: Christiane Orcel

Required textbooks:

Jansma, Kimberly and Kassen, Margaret Ann; *Motifs: An Introduction to French (6th)*, Heinle Cengage Learning, 2014. ISBN: 978-1-133-937456

Jansma, Kimberly and Kassen, Margaret Ann; *Student Activities Manual: Motifs: An Introduction to French (2014)*, Heinle Cengage Learning, 6th. ISBN: 978-1-133-61180-6

L 107A. Intermediate Japanese.

Instructor: Ritsuko Toner

Required textbooks:

Hirai, Ritsuko; *First Year Japanese, 6th ed. textbook First Year Japanese Workbook, 7th ed Package (6th)*, Pearson Educatio Inc., 2016. ISBN: 1323405283

L 108A. Advanced Japanese.

Instructor: Ritsuko Toner

Required textbooks:

Ritsuko Hirai; *Beyond the First Year Japanese (6th)*, Pearson Educatio Inc., 2010. ISBN: 978-0-558-52403-6

L 110A (Section 2). Elementary Spanish.

Instructor: Gloria Arjona

Required textbooks:

Rusch, Domínguez, Caycedo, Garner; *Imágenes (3rd Edition)*, Heinle Cengage Learning, . ISBN: 9781285054872

L 110A (Section 1). Elementary Spanish.

Instructor: Daniel Garcia

Required textbooks:

Debbie Rusch, Marcela Domínguez, Lucía Caycedo Garner; *Imágenes: An Introduction to Spanish Language and Cultures (3rd)*, Cengage Learning, 2014. ISBN: 9781285927145

L 112A. Intermediate Spanish.

Instructor: Daniel Garcia

Required textbooks:

Samaniego, Fabian et al.; *Mundo 21. Español para el siglo 21 4th + iLrn™ Heinle Learning Center Printed Access Card 4th Edition (4th)*, Cengage / Heinle, 2012. ISBN: 978-1-111-70719-4

L 114A. Spanish and Latin American Literature.

Instructor: Gloria Arjona

Required textbooks:

Renjilian-Burgy, Joy, Valette Rebecca M.;; *Album (4th Edition)*, Cengage, 2014. ISBN: 978-1133941040

L 130A. Elementary German.

Instructor: Andreas Aebi

Required textbooks:

Forester, Daniuk; *Auf Geht's (3rd)*, Live Oak Media, 2015. ISBN: 978-1-886553-51-4

L 132A. Intermediate German.

Instructor: Andreas Aebi

Required textbooks:

Forester, Daniuk; *Weiter Geht's (3.3)*, Live Oak Media, 2014. ISBN: 978-1-886553

L 170A. Introduction to Chinese.

Instructor: Xiangyun Wang

Required textbooks:

Liu, Yuehua, et al; *Integrated Chinese, Textbook, Level 1 Part 1 (3rd)*, Cheng Tsui, . ISBN: 9780887276385

Liu, Yuehua, et al; *Integrated Chinese, Workbook, Level 1 Part 1 (3rd)*, Cheng Tsui, . ISBN: 9780887276408

L 172A. Intermediate Chinese.

Instructor: Xiangyun Wang

Required textbooks:

Liu, Yuehua, et al; *Integrated Chinese, Textbook, Level 2 Part 1 (3rd)*, Cheng Tsui, . ISBN: 9780887276705

Liu, Yuehua, et al; *Integrated Chinese, Workbook, Level 2 Part 1 (3rd)*, Cheng Tsui, . ISBN: 9780887276743

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

Instructor: Christiane Orcel

Required textbooks:

Petrie, Dennis and Boggs, Joseph; *The Art of Watching Films (8th)*, McGraw-Hill, 2011. ISBN: 978-0073386171

MATHEMATICS

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

Instructor: Dinakar Ramakrishnan

Required textbooks:

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

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

Instructor: Faramarz Vafaee

Required textbooks:

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

Ma 005A. Introduction to Abstract Algebra.

Instructor: Matthias Flach

Required textbooks:

Dummit, David S., Foote, Richard M.; *Abstract Algebra (3rd)*, Wiley, 2004. ISBN: 978-0-471-43334-7

Ma 105A. Introduction to Abstract Algebra.

Instructor: Matthias Flach

Required textbooks:

Dummit, David S., Foote, Richard M.; *Abstract Algebra*, . ISBN: 978-0-471-43334-7

Ma 108A. Classical Analysis.

Instructor:

Required textbooks:

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

Ma 109A. Introduction to Geometry and Topology.

Instructor: Matilde Marcolli

Required textbooks:

James Munkres; *Topology*, Pearson, 2017. ISBN: 9780134689517

Allen Hatcher; *Algebraic Topology*, Cambridge University Press, 2001. ISBN: 9780521795401

Ma 116A. Mathematical Logic and Axiomatic Set Theory.

Instructor:

Required textbooks:

Marker, David; *Model Theory: An Introduction*, , . ISBN: 978-0-387-22734-4

Ma 120A. Abstract Algebra.

Instructor: Dinakar Ramakrishnan

Required textbooks:

Lang, Serge; *Algebra*, , . ISBN: 978-0387953854

Ma 121A. Combinatorial Analysis.

Instructor: Eric Rains

Required textbooks:

van Lint, J. H., Wilson, R.M.; *A Course in Combinatorics*, , . ISBN: 978-0521006019

Ma 151A. Algebraic and Differential Topology.

Instructor: Yi Ni

Required textbooks:

Hatcher, Allen; *Algebraic Topology*, Cambridge University Press, . ISBN: 978-0521795401

MUSIC

Mu 051. Understanding Music.

Instructor: Thomas Neenan

Required textbooks:

Kelly, Thomas Forrest; *Music Then And Now*, Norton, . ISBN: 978-0393929881

Mu 137. History I: Music History to 1750.

Instructor: Thomas Neenan

Required textbooks:

Freedman, Richard; *Music in the Renaissance*, Norton, 2013. ISBN: 978-0393929164

Heller, Wendy; *Music in the Baroque (2014)*, Norton, . ISBN: 978-0393929171

PHYSICS

Ph 001A. Classical Mechanics and Electromagnetism.

Instructor: Jonas Zmuidzinas

Required textbooks:

Frautschi, Steven, Olenick, Richard, Apostol, Tom, Goodstein, David; *The Mechanical Universe: Mechanics and Heat, Advanced Edition*, . ISBN: 978-0521715904

Suggested textbooks:

Feynman, Richard; *The Feynman Lectures on Physics (Vol I and II)*, . ISBN: 978-0465023820

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

Instructor: Rana Adhikari

Required textbooks:

French, Tony; *Vibrations and Waves*, , 2003. ISBN: 8123909144

Ph 003. Physics Laboratory.

Instructors: Eric Black, Kenneth Libbrecht

Required textbooks:

Taylor, John R.; *An Introduction to Error Analysis (2)*, University Science Books, 1997. ISBN: 978-0-935702-75-0

Ph 005. Analog Electronics for Physicists.

Instructors: Kenneth Libbrecht, Frank Rice

Suggested textbooks:

Horowitz,Hill; *The Art of Electronics (3)*, , . ISBN: 978-0521809269

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

Instructor: Xie Chen

Suggested textbooks:

Georgi, Howard; *The Physics of Waves*, , . ISBN: 0136656218

Crawford, Frank; *Waves*, , . ISBN: 0070048606

Ph 106A. Topics in Classical Physics.

Instructor: Alan Weinstein

Required textbooks:

L.N. Hand and J.D. Finch; *Analytical Mechanics (1)*, Cambridge University Press, 1998. ISBN: 978-0521575720

Ph 127A. Statistical Physics.

Instructor: Olexei Motrunich

Suggested textbooks:

M. Kardar; *Statistical Physics of Particles.*, Cambridge University Press, 2007. ISBN: 9780521873420

Ph 135A. Applications of Quantum Mechanics.

Instructor: Nai-Chang Yeh

Suggested textbooks:

Ziman, J. M.; *Principles of the Theory of Solids (Second)*, Cambridge University Press, 1972. ISBN: 0-521-29733-8

Ashcroft, N. W.,Mermin, N. D.; *Solid State Physics*, W. B. Saunders Company, 1976. ISBN: 978-0-03-083993-1

Ph 205A. Relativistic Quantum Field Theory.

Instructor: Anton Kapustin

Required textbooks:

Srednicki, M; *Quantum Field Theory*, , . ISBN: 978-0521864497

POLITICAL SCIENCE

PS 121. Analyzing Congress.

Instructor: Alexander Hirsch

Required textbooks:

Stewart, Charles; *Analyzing Congress (2)*, W. W. Norton Company, 2011. ISBN: 978-0393935066

Davidson, Roger,Oleszek, Walter, Lee, Frances,Schickler, Eric; *Congress and Its Members (14th Edition)*, CQ Press, 2013. ISBN: 978-1452239958

PS 135. Analyzing Legislative Elections.

Instructor: Jonathan Katz

Required textbooks:

Cox, Gary; *Making Votes Count: Strategic Coordinate in the World's Electoral Systems.*, Cambridge University Press, 1997. ISBN: 9780521585279

Cox, Gary W.,Katz, Jonathan N.; *Elbridge Gerry's Salamander: The Electoral Consequences of the Reapportionment Revolution.*, Cambridge University Press., 202. ISBN: 9780521001540

Jacobson, Gary C.,Carson, Jamie L.; *The Politics of Congressional Elections (9th)*, Rowman Lifflefield., 2016. ISBN: 978-1-4422-5262-2

Morton, Rebecca; *Analyzing Elections*, Norton, 2006. ISBN: 978-0-393-97829-2

SOCIAL SCIENCE

SS 202A. Political Theory.

Instructor: Alexander Hirsch

Required textbooks:

Austen-Smith, David,Banks, Jeffrey S.; *Positive Political Theory I: Collective Preference*, , . ISBN: 978-0472087211