This document lists the required and optional textbooks for Caltech courses offered during the FA 2018-19 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 144B
Ec 011
Wr 002
APPLIED & COMPUTATIONAL MATH

ACM/IDS 101A. Methods of Applied Mathematics.

Instructor: Oscar Bruno

Suggested textbooks:


ASTROPHYSICS

Ay 020. Basic Astronomy and the Galaxy.

Instructor: Evan Kirby

Required textbooks:

- Carroll & Ostlie; An Introduction to Modern Astrophysics (2nd), Pearson Addison-Wesley, 2007. ISBN: 0805304029

Ay 121. Radiative Processes.

Instructors: Gregg Hallinan, Evan Kirby

Required textbooks:


BIOCHEMISTRY & MOLECULAR BIOPHYSICS

BIOENGINEERING

BIOLOGY

Bi 122. Genetics.

Instructor: Bruce Hay
Required textbooks:

**Bi/Ch 110. Introduction to Biochemistry.**

**Instructors:** Carl Parker, Scott Virgil

**Required textbooks:**

**Suggested textbooks:**

**BUSINESS, ECONOMICS, AND MANAGEMENT**

**BEM101. Selected Topics in Business Economics and Management: Mathematical Models in Fintech.**

**Instructor:** Jaksa Cvitanic

**Suggested textbooks:**
Cartea, Alvaro, Jaimungal, Sebastian, Penalva, Jose; *Algorithmic and High-Frequency Trading*, ISBN: 1107091144

**BEM105. Options.**

**Instructor:** Jaksa Cvitanic

**Required textbooks:**

**CHEMICAL ENGINEERING**

**CHEMISTRY**

**Ch 001A. General Chemistry.**
Instructor: Nathan Lewis

**Required textbooks:**


Ch 041A. Organic Chemistry.

Instructor: Dennis Dougherty

**Required textbooks:**


Ch 117. Introduction to Electrochemistry.

Instructor: Kimberly See

**Required textbooks:**


Ch 125A. The Elements of Quantum Chemistry.

Instructor: Scott Cushing

**Required textbooks:**


**Suggested textbooks:**


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**ECONOMICS**

Ec 011. Introduction to Economics.

Instructor: Charles Plott
**Required textbooks:**

**Ec 122. Econometrics.**
Instructor: Robert Sherman

**Required textbooks:**

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**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:**

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**ENGLISH**

**En 102. Origins of Science Fiction.**
Instructor: Leah Klement

**Required textbooks:**


En 128. Modern and Contemporary Irish Literature.
Instructor: Kevin Gilmartin

**Required textbooks:**
- James Joyce; *Dubliners*, Penguin, . ISBN: 978-1535565448
- Elizabeth Bowen; *A World of Love*, Anchor, . ISBN: 978-1400031054
- Brian Friel; *Translations*, Faber and Faber, . ISBN: 978-0571117420
- Seamus Deane; *Reading in the Dark*, Vintage, . ISBN: 978-0375700231
- Roddy Doyle; *Paddy Clarke Ha Ha Ha*, Penguin, . ISBN: 978-0140233902

**Suggested textbooks:**

En 141. Contemporary African American Literature.
Instructor: Melanie Sherazi

**Required textbooks:**

ENVIRONMENTAL SCIENCE & ENGINEERING

ESE130. Atmosphere Dynamics.
Instructor: Simona Bordoni

**Required textbooks:**
FRESHMAN SEMINARS

Instructor: Joann Stock

Required textbooks:

Instructor: Hugh Politzer

Required textbooks:

GEOLOGY

Ge 114A. Mineralogy.
Instructor: George Rossman

Suggested textbooks:

Ge 114B. Mineralogy Laboratory.
Instructor: George Rossman

Suggested textbooks:
Ge 161. Plate Tectonics.

Instructor: Joann Stock

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

HISTORY

H 111. The Medieval Church.

Instructor: Warren Brown

Required textbooks:

H 113. The Troubadours.

Instructor: Gabriel Motzkin

Required textbooks:

H 150. America in the 1960s.

Instructor: Michael Savage

Required textbooks:
HISTORY AND PHILOSOPHY OF SCIENCE

HPS/Pl 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:
Griffith, Mark et al.; Greek Tragedies 3, ISBN: 9780226035932
Griffith, Mark et al.; Greek Tragedies 2, ISBN: 9780226035598
Homer; The Iliad, ISBN: 9780140275360
Griffith, Mark et al.; Greek Tragedies 1, ISBN: 9780226035284

Hum/En 024. The Scientific Imagination in English Literature.

Instructor:

Required textbooks:
Marlowe, Christopher; Doctor Faustus, ISBN: 9780199537068
Shakespeare, William; The Tempest, ISBN: 9780393978193
Bacon, Francis; Three Modern Utopias, ISBN: 9780199537990
Stoppard, Tom; Arcadia, ISBN: 9780571169344
McEwan, Ian; Enduring Love, ISBN: 9780385494144
Wells, HG; Island of Doctor Moreau, ISBN: 9781784872106
Shelley, Mary; Frankenstein, ISBN: 9781722471217

Hum/En 026. Encountering Difference in Medieval Literature.
Instructor: Leah Klement

Required textbooks:

Hum/En 029. Dream Narratives.
Instructor: Jocelyn Holland

Required textbooks:
- Calderón de la Barca, Pedro; *Life is a Dream (Penguin Classics)*, penguin, varies (2006/7). ISBN: 0143104829

Hum/En 039. Contemporary American Fiction.
Instructor: Melanie Sherazi

Required textbooks:

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

Required textbooks:
- Williams, Joseph M and Bizup, Joseph; *Style (12th)*, Pearson, . ISBN: 978-0-13-408041-3

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

**Required textbooks:**


Williams, Joseph M. and Bizup, Joseph; *Style (12th)*, Pearson. ISBN: 978-0-13-408041-3

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

Instructor: Warren Brown

**Required textbooks:**


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**LANGUAGES**

**L 102A. Elementary French.**

Instructor: Christiane Orcel

**Required textbooks:**


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**L 106A (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 106A (Section 2). 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 110A (Section 1). Elementary Spanish.
Instructor: Daniel Garcia

**Required textbooks:**

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

**Required textbooks:**

L 112A. Intermediate Spanish.
Instructor: Gloria Arjona

**Required textbooks:**

L 130A. Elementary German.
Instructor: Andreas Aebi

**Required textbooks:**
L 132A. Intermediate German.

Instructor: Andreas Aebi

Required textbooks:
Forester, Lee; Antoniuk, David; Weiter geht's! Intermediate German Language and Culture, 1st edition textbook, Publisher: Live Oak Multimedia, ISBN: 978-1-886553-08-8

L 170A. Introduction to Chinese.

Instructor: Xiangyun Wang

Required textbooks:

L 172A. Intermediate Chinese.

Instructor: Xiangyun Wang

Required textbooks:

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

Instructor: Christiane Orcel

Required textbooks:

MATERIALS SCIENCE

MS 132. Diffraction and Structure.
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 108A. Classical Analysis.
Instructor: Kirill Lazebnik

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

Ma 109A. Introduction to Geometry and Topology.
Instructor: Vladimir Markovic

Required textbooks:

Ma 110A. Analysis.
Instructor: Nikolai Makarov

Required textbooks:
Ma 120A. Abstract Algebra.
Instructor: Dinakar Ramakrishnan

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

Ma 130A. Algebraic Geometry.
Instructor: Christopher Campbell

Required textbooks:
Hartshorne, R; Algebraic Geometry, ISBN: 978-1-4757-3849-0

Ma 147A. Dynamical Systems.
Instructor: Nikolai Makarov

Required textbooks:

Ma 151A. Algebraic and Differential Topology.
Instructor: Vladimir Markovic

Required textbooks:

Ma 160A. Number Theory.
Instructor: Ashay Burungale

Required textbooks:
Marcus, D; Number Fields, ISBN: 978-1-4684-9356-6
Neukirch, Jürgen; Algebraic Number Theory, ISBN: 978-3-662-03983-0

Ma 191A. Selected Topics in Mathematics: Groups and Dynamics.
**Instructor:** Aristotelis Panagiotopoulos

**Suggested textbooks:**

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**Ma/CS 006A. Introduction to Discrete Mathematics.**

**Instructor:** Nets Katz

**Suggested textbooks:**

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**Ma/CS 106A. Introduction to Discrete Mathematics.**

**Instructor:** Nets Katz

**Suggested textbooks:**

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**MUSIC**

**Mu 057. Fundamentals of Music Theory and Elementary Ear Training.**

**Instructor:** Thomas Neenan

**Required textbooks:**

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**PHYSICS**

**Ph 001A. Classical Mechanics and Electromagnetism.**

**Instructor:** Clifford Cheung

**Required textbooks:**
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: Frank Porter

Required textbooks:

Ph 012A. Waves, Quantum Physics, and Statistical Mechanics.
Instructor: Xie Chen

Required textbooks:
Georgi, H; *The Physics of Waves*, . ISBN: 978-0136656210
Crawford; *Waves, F*, . ISBN: 978-0070048607

Ph 106A. Topics in Classical Physics.
Instructor: Alan Weinstein

Required textbooks:

Ph 125A. Quantum Mechanics.
Instructor: Mark Wise

Required textbooks:
Shankar, R; *Principles of Quantum Mechanics (2)*, . ISBN: 0-306-44790-8

Ph 127A. Statistical Physics.
Instructor: Olexei Motrunich

Suggested textbooks:
Ph 129A. Mathematical Methods of Physics.
Instructor: Hiroshi Oguri

Required textbooks:

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

Required textbooks:
Srednicki, M; Quantum Field Theory, ISBN: 978-0521864497

POLITICAL SCIENCE

PS 121. Analyzing Congress.
Instructor: Alexander Hirsch

Required textbooks:

PS 135. Analyzing Legislative Elections.
Instructor: Jonathan Katz

Required textbooks:
SOCIAL SCIENCE WRITING

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

Instructor: Christine Daley

Required textbooks: