

# Civil Engineering and Business Administration

## M.E.T. at a Glance: One program, two Bachelor of Science (B.S.) degrees.

The Civil Engineering and Business Administration simultaneous degree is part of the Management, Entrepreneurship, & Technology Program. The M.E.T. Program aims to educate leaders with a seamless understanding of technology innovation, from idea to real-world impact.

M.E.T. students earn two Bachelor of Science degrees in one program that combines the best of the top-ranked College of Engineering and Haas School of Business. The integrated curriculum is completed in four years. Internships, career coaching and other enrichment activities provide ample opportunity for hands-on experience with innovation and entrepreneurship. Each M.E.T. cohort is small, allowing for close mentoring and a tight-knit community.

## Admission to the M.E.T. Program

The M.E.T. Program seeks inquisitive, self-motivated students with a passion for finding and solving big problems. It is highly competitive and is only open to freshmen during the UC application period. Freshman admission is limited to a maximum of 50 students.

For further information, please see the M.E.T. website (<http://guide.berkeley.edu/about/blank>).

### Accreditation

The B.S. program in Civil Engineering is accredited by the Engineering Accreditation Commission of ABET. The Undergraduate Business Degree Program is accredited by The Association to Advance Collegiate Schools of Business (AACSB).

In addition to the University, campus, and M.E.T. Program requirements, listed on the College Requirements tab, students must fulfill the below requirements.

### General Guidelines

1. A minimum of 38 upper division business units are required.
2. Students must complete the College Requirements (<http://guide.berkeley.edu/archive/2019-20/undergraduate/degree-programs/civil-engineering-business-administration/#collegerequirementstext>) and the Major Requirements.
3. Students must complete the degree program in eight semesters, not including Summer Session.
4. All Haas business courses must be taken for a letter grade, including core substitutions, with the exception of UGBA 194 (<http://guide.berkeley.edu/archive/2019-20/search/?P=UGBA%20194>), UGBA 198 (<http://guide.berkeley.edu/archive/2019-20/search/?P=UGBA%20198>) and UGBA 199 (<http://guide.berkeley.edu/archive/2019-20/search/?P=UGBA%20199>) (only offered *Pass/No Pass*).
5. All technical courses that can be used to fulfill a requirement must be taken for a letter grade.
6. Students who receive a grade of D+ or lower in a core UGBA course must repeat the course until they achieve a grade of C- or better.

7. Students must complete their business prerequisite courses (including R&C) by the spring semester of their sophomore (2nd) year.
8. Students in this program must adhere to all policies and procedures of the College of Engineering and the Haas School of Business.

For information regarding University and campus requirements, Reading and Composition, breadth, class schedule, minimum academic progress, and unit requirements, please see the College Requirements (<http://guide.berkeley.edu/archive/2019-20/undergraduate/degree-programs/civil-engineering-business-administration/#collegerequirementstext>).

## Lower Division Requirements

UGBA 10	Principles of Business	3
ECON 1	Introduction to Economics	4
MATH 1A	Calculus	4
MATH 1B	Calculus	4
MATH 53	Multivariable Calculus	4
MATH 54	Linear Algebra and Differential Equations	4
CHEM 1A	General Chemistry	3
COMPSCI C8 & STAT 88	Foundations of Data Science and Probability and Mathematical Statistics in Data Science	7
PHYSICS 7A	Physics for Scientists and Engineers	4
PHYSICS 7B	Physics for Scientists and Engineers	4
ENGIN 7	Introduction to Computer Programming for Scientists and Engineers	4
CIV ENG 11	Engineered Systems and Sustainability	3
CIV ENG C30/ MEC ENG C85	Introduction to Solid Mechanics	3
CIV ENG 60	Structure and Properties of Civil Engineering Materials	3
CIV ENG 93	Engineering Data Analysis	3
Basic Science Elective Complete one of the following:		3-4
CIV ENG 70	Engineering Geology	3-4
or CHEM 1B General Chemistry		
or BIOLOGY 1B General Biology Lecture and Laboratory		
Reading & Composition R1A and R1B		4-4

## Subject Matter Requirements

Students with a specific interest within civil engineering may choose to emphasize one of the following areas in their choice of electives: engineering and project management, environmental engineering, geosystems (geoengineering), structural engineering, or transportation engineering. See the suggested courses (<http://www.ce.berkeley.edu/undergrad/curriculum>) for each area of interest.

### Fundamentals

CIV ENG 100	Elementary Fluid Mechanics	3-4
or CIV ENG 13: Applied Structural Mechanics		
Engineering Fundamentals Elective - Complete one of the following:		
COMPSCI C10 Principles & Techniques of Data Science [4]		
EECS 127	Optimization Models in Engineering [4]	
ENGIN 40	Engineering Thermodynamics [4]	
MEC ENG 40	Thermodynamics [3]	
MEC ENG 104	Engineering Mechanics II [3]	

**CEE Applications - Complete three of the following (9 units):**

CIV ENG 103	Introduction to Hydrology	3
CIV ENG 111	Environmental Engineering	3
CIV ENG 120	Structural Engineering	3
CIV ENG 155	Transportation Systems Engineering	3
CIV ENG 175	Geotechnical and Geoenvironmental Engineering	3
CIV ENG 191	Civil and Environmental Engineering Systems Analysis	3

**CEE Practice**

CIV ENG 167	Engineering Project Management	3
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**Capstone Design - Complete one of the following:**

CIV ENG 105	Water and Wind - Design for a Variable Environment [3]	
CIV ENG 112	Environmental Engineering Design [3]	
CIV ENG 122N	Design of Steel Structures & CIV ENG 122N and Structural Steel Design Project	
CIV ENG 123N	Design of Reinforced Concrete Structures & CIV ENG 123N and Structural Concrete Design Project	
CIV ENG 153	Transportation Facility Design [3]	
CIV ENG 179	Geosystems Engineering Design [3]	
CIV ENG 180	Life-Cycle Design and Construction [4]	
CIV ENG 186	Design of Internet-of-Things for Smart Cities [3]	

CEE Extensions: Complete nine units of additional CIV ENG courses

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<sup>1</sup> CEE Extensions-Nine units chosen from upper division CIV ENG courses not being counted toward other major requirements. Students may use up to three units of CIV ENG graduate courses numbered 200-295, taken Fall 2017 or later, toward their CEE Extensions units. Students must have a technical GPA of 3.0 or higher to obtain permission to enroll in CIV ENG graduate courses. Students may receive up to three units of credit toward their CEE Extensions units for work on a research project in CIV ENG H194 (Honors Undergraduate Research).

**Upper Division Business Administration Requirements**

UGBA 100	Business Communication	2
UGBA 101A	Microeconomic Analysis for Business Decisions	3
UGBA 101B	Macroeconomic Analysis for Business Decisions	3
UGBA 102A	Financial Accounting	3
UGBA 102B	Managerial Accounting	3
UGBA 103	Introduction to Finance	4
UGBA 104	Introduction to Business Analytics	3
UGBA 105	Leading People	3
UGBA 106	Marketing	3
UGBA 107	The Social, Political, and Ethical Environment of Business	3

**M.E.T. Special Topics**Two courses are required. <sup>1</sup> 2-2**Upper Division Business Administration Elective Courses**

Select a minimum of 4-6 units of upper division UGBA elective courses in order to complete a minimum of 38 units of upper division Business Administration courses. 4-6

UGBA 113	Course Not Available	
UGBA 115	Competitive Strategy [3]	

UGBA 117	Special Topics in Economic Analysis and Policy [1-4]
UGBA 118	International Trade [3]
UGBA 119	Leading Strategy Implementation [3]
UGBA 120AA	Intermediate Financial Accounting 1 [4]
UGBA 120AB	Intermediate Financial Accounting 2 [4]
UGBA 120B	Advanced Financial Accounting [4]
UGBA 121	Federal Income Tax Accounting [4]
UGBA 122	Financial Information Analysis [4]
UGBA 123	Operating and Financial Reporting Issues in the Financial Services Industry [3]
UGBA W125	Course Not Available [3]
UGBA 126	Auditing [4]
UGBA 127	Special Topics in Accounting [1-4]
UGBA 128	Strategic Cost Management [3]
UGBA 129	Course Not Available [3]
UGBA 131	Corporate Finance and Financial Statement Analysis [3]
UGBA 132	Financial Institutions and Markets [3]
UGBA 133	Investments [3]
UGBA 136F	Behavioral Finance [3]
UGBA 137	Special Topics in Finance [1-4]
UGBA 141	Production and Operations Management [2-3]
UGBA 143	Game Theory and Business Decisions [3]
UGBA 147	Special Topics in Operations and Information Technology Management [1-4]
UGBA 151	Management of Human Resources [3]
UGBA 152	Negotiation and Conflict Resolution [3]
UGBA 154	Power and Politics in Organizations [2,3]
UGBA 155	Leadership [3]
UGBA 156AC	Course Not Available
UGBA 157	Special Topics in the Management of Organizations [1-4]
UGBA 160	Customer Insights [3]
UGBA 161	Market Research: Tools and Techniques for Data Collection and Analysis [3]
UGBA 162	Brand Management and Strategy [3]
UGBA 162A	Product Branding and Branded Entertainment [2]
UGBA 165	Advertising Strategy [3]
UGBA 167	Special Topics in Marketing [1-4]
UGBA 168B	Course Not Available [3]
UGBA 169	Pricing [3]
UGBA 170	Course Not Available
UGBA C172	History of American Business [3]
UGBA 175	Legal Aspects of Management [3]
UGBA 176	Innovations in Communications and Public Relations [2]
UGBA 177	Special Topics in Business and Public Policy [1-4]
UGBA 178	Introduction to International Business [3]
UGBA 179	International Consulting for Small and Medium-Sized Enterprises [3]
UGBA 180	Introduction to Real Estate and Urban Land Economics [3]
UGBA 183	Introduction to Real Estate Finance [3]

UGBA 184	Urban and Real Estate Economics [3]
UGBA 187	Special Topics in Real Estate Economics and Finance [1-4]
UGBA 190S	Strategy for the Information Technology Firm [3]
UGBA 190T	Special Topics in Innovation and Design [1-4]
UGBA 190V	Course Not Available [2]
UGBA 191C	Communication for Leaders [2]
UGBA 191I	Improvisational Leadership [3]
UGBA 191P	Leadership and Personal Development [3]
UGBA 192A	Leading Nonprofit and Social Enterprises [3]
UGBA 192B	Strategic Philanthropy [2]
UGBA 192L	Applied Impact Evaluation [2]
UGBA 192N	Topics in Social Sector Leadership [1-5]
UGBA 192P	Sustainable Business Consulting Projects [3]
UGBA 192T	Topics in Corporate Social Responsibility [1-4]
UGBA 193C	Curricular Practical Training for International Students [0.0]
UGBA 193I	Business Abroad [1-4]
UGBA 194	Undergraduate Colloquium on Business Topics [1]
UGBA 195A	Entrepreneurship [3]
UGBA 195P	Entrepreneurship: How to Successfully start a New Business [3]
UGBA 195S	Entrepreneurship To Address Global Poverty [3]
UGBA 195T	Topics in Entrepreneurship [1-3]
UGBA 196	Special Topics in Business Administration [1-4]
UGBA 198	Directed Study [1-4]
UGBA 199	Supervised Independent Study and Research [1-4]

<sup>1</sup> M.E.T. Special Topics courses will count as upper division business units.

### University of California Requirements

Entry Level Writing (<http://guide.berkeley.edu/archive/2019-20/undergraduate/colleges-schools/haas-business/entry-level-writing-requirement>)

All students who enter the University of California as freshmen must demonstrate their command of the English language by fulfilling the Entry Level Writing Requirement. Fulfillment of this requirement is also a prerequisite to enrollment in all reading and composition courses at UC Berkeley.

American History and American Institutions (<http://guide.berkeley.edu/archive/2019-20/undergraduate/colleges-schools/haas-business/american-history-institutions-requirement>)

The American History and Institutions requirements are based on the principle that a US resident who graduates from an American university should have an understanding of the history and governmental institutions of the United States.

### Campus Requirement

American Cultures (<http://guide.berkeley.edu/archive/2019-20/undergraduate/colleges-schools/haas-business/american-cultures-requirement>)

American Cultures (AC) is the one requirement that all undergraduate students at UC Berkeley need to take and pass in order to graduate. The

requirement offers an exciting intellectual environment centered on the study of race, ethnicity, and culture of the United States. AC courses offer students opportunities to be part of research-led, highly accomplished teaching environments, grappling with the complexity of American culture.

### M.E.T. Program Requirements

#### Reading and Composition

Two Reading and Composition (R&C) courses must be taken for a letter grade (C- or better required), and must be completed by no later than the end of the sophomore year (4th semester of enrollment). The first half of R&C, the "A" course, must be completed by the end of the freshman year; the second half of R&C, the "B" course, by no later than the end of the sophomore year or a student's registration will be blocked. View a detailed list of courses (<http://guide.berkeley.edu/archive/2019-20/undergraduate/colleges-schools/engineering/reading-composition-requirement>) that fulfill Reading and Composition requirements.

#### Breadth Requirement

The undergraduate breadth requirement provides Berkeley students with a rich and varied educational experience outside of their major program. As the foundation of a liberal arts education, breadth courses give students a view into the intellectual life of the University while introducing them to a multitude of perspectives and approaches to research and scholarship. Engaging students in new disciplines and with peers from other majors, the breadth experience strengthens interdisciplinary connections and context that prepare Berkeley graduates to understand and solve the complex issues of their day.

Students in the M.E.T. Program must successfully complete six breadth courses, one in each of the following categories:

Arts and Literature

Historical Studies

International Studies

Philosophy and Values (will be satisfied with UGBA 107)

Physical Science (will be satisfied with Physics 7B)

Social and Behavioral Sciences (will be satisfied with Econ 1)

- With the exception of UGBA 107, UGBA courses cannot be used to fulfill breadth requirements.
- With the exception of Econ 1, microeconomics and macroeconomics at any level (Econ 2, Econ 3, Econ 100A/B, Econ 101A/B, IAS 106/107) cannot be used to fulfill breadth requirements.
- Courses offered by any Engineering department, with the exception of BIO ENG 100, COMPSCI C79, ENGIN 125, 157AC, MEC ENG 191K and 191AC, cannot be used to fulfill breadth requirements.
- No more than two courses from any one department may be used to satisfy the breadth requirement (L&S Discovery courses (<http://lsdiscovery.berkeley.edu>) are exempt).
- Advanced Placement or International Baccalaureate exams cannot be used to fulfill the breadth requirement. Some A-Level exams are accepted, but a maximum of two A-Level exams may be used to fulfill breadth requirements.
- Two of the breadth courses must be upper-division (courses numbered 100-196).

- Courses numbered 97, 98, 99, or above 196 may not be used to complete any breadth requirement.
- Breadth courses must be a minimum of 3 semester units.
- Reading & Composition courses cannot be used to fulfill breadth requirements.

Class Schedule Requirements

- Minimum units per semester: 13
- Maximum units per semester: 20.5
- Students in the M.E.T. Program must enroll each semester in no fewer than two technical courses (of a minimum of 3 units each) required of the engineering major program of study in which the student is officially declared.

Minimum Academic (Grade) Requirements

- A minimum overall and semester grade point average of 2.000 (C average) is required. Students will be subject to dismissal from the University if during any fall or spring semester their overall U.C. GPA falls below a 2.000, or their semester GPA is less than 2.000.
- Students must achieve a minimum GPA of 2.000 (C average) in upper division technical courses each semester. Students will be subject to dismissal from the University if their upper division technical GPA falls below 2.000.
- A minimum overall GPA of 2.000, and a minimum 2.000 GPA in upper division technical course work required of the major are required to graduate.

Unit Requirements

- A minimum of 120 units are required to graduate.
- A maximum of 16 units of Special Studies coursework (courses numbered 97, 98, 99, 197, 198, or 199) will count towards the 120 units; a maximum of four are allowed in a given semester.
- A maximum of four units of Physical Education from any school attended will count towards the 120 units.
- Passed grades may account for no more than one-third of the total units completed at UC Berkeley, Fall Program for Freshmen (FPF), UC Education Abroad Program (UCEAP), or UC Berkeley Washington Program (UCDC) toward the 120 overall minimum unit requirement. Transfer credit is not factored into the limit. This includes transfer units from outside of the UC system, other UC campuses, credit-bearing exams, as well as UC Berkeley Extension XB units.

University of California Requirements

Entry Level Writing (<https://www.ucop.edu/elwr>)

All students who will enter the University of California as freshmen must demonstrate their command of the English language by fulfilling the Entry Level Writing Requirement. Satisfaction of this requirement is also a prerequisite to enrollment in all Reading and Composition courses at UC Berkeley.

American History and American Institutions (<http://guide.berkeley.edu/archive/2019-20/undergraduate/education/#universityrequirements>)

The American History and Institutions requirements are based on the principle that a U.S. resident graduated from an American university

should have an understanding of the history and governmental institutions of the United States.

Campus Requirement

American Cultures (<http://guide.berkeley.edu/archive/2019-20/undergraduate/education/#campusrequirements>)

The American Cultures requirement is a Berkeley campus requirement, one that all undergraduate students at Berkeley need to pass in order to graduate. You satisfy the requirement by passing, with a grade not lower than C- or P, an American Cultures course. You may take an American Cultures course any time during your undergraduate career at Berkeley. The requirement was instituted in 1991 to introduce students to the diverse cultures of the United States through a comparative framework. Courses are offered in more than fifty departments in many different disciplines at both the lower and upper division level.

The American Cultures requirement and courses constitute an approach that responds directly to the problem encountered in numerous disciplines of how better to present the diversity of American experience to the diversity of American students whom we now educate.

Faculty members from many departments teach American Cultures courses, but all courses have a common framework. The courses focus on themes or issues in United States history, society, or culture; address theoretical or analytical issues relevant to understanding race, culture, and ethnicity in American society; take substantial account of groups drawn from at least three of the following: African Americans, indigenous peoples of the United States, Asian Americans, Chicano/Latino Americans, and European Americans; and are integrative and comparative in that students study each group in the larger context of American society, history, or culture.

This is not an ethnic studies requirement, nor a Third World cultures requirement, nor an adjusted Western civilization requirement. These courses focus upon how the diversity of America’s constituent cultural traditions have shaped and continue to shape American identity and experience.

Visit the Class Schedule (<http://classes.berkeley.edu>) or the American Cultures website (<http://americancultures.berkeley.edu>) for the specific American Cultures courses offered each semester. For a complete list of approved American Cultures courses at UC Berkeley and California Community Colleges, please see the American Cultures Subcommittee’s website (<https://academic-senate.berkeley.edu/committees/amcult>). See your academic adviser if you have questions about your responsibility to satisfy the American Cultures breadth requirement.

Freshman				
	Fall	Units	Spring	Units
MATH 1A <sup>1</sup>		4	MATH 1B <sup>6</sup>	4
CHEM 1A <sup>2</sup>		3	PHYSICS 7A <sup>7</sup>	4
COMPSCI C8 & STAT 88 <sup>12</sup>		6	UGBA 10	3
Reading & Composition Part A Course <sup>5</sup>		4	CIV ENG 93	3
M.E.T. Special Topics Course (UGBA 196) <sup>13</sup>		2	Breadth - International Studies <sup>3</sup>	4
		19		18
Sophomore				
	Fall	Units	Spring	Units
MATH 53		4	MATH 54	4



PHYSICS 7B (Breadth - Physical Science) <sup>3</sup>	4 CIV ENG C30 (Cross-listed with MECH ENG C85)	3		
Basic Science Elective <sup>8</sup>	3 ENGIN 7	4		
Reading & Composition Part B Course	4 ECON 1 (Breadth - Social and Behavioral Sciences) <sup>3,4</sup>	4		
Breadth - Historical Studies/AC <sup>3</sup>	4 CIV ENG 60	3		
19		18		
Junior				
	Fall	Units	Spring	Units
CIV ENG 100 or 132		3-4 CIV ENG 11		3
UGBA 100		2 UGBA 101B		3
UGBA 101A		3 UGBA 107 (Breadth - Philosophy & Values) <sup>3</sup>		3
UGBA 105		3 UGBA 102A		3
CEE Applications Elective <sup>9</sup>		3 CEE Applications Elective <sup>9</sup>		3
Engineering Fundamentals Elective <sup>15</sup>		3-4 CEE Applications Elective <sup>9</sup>		3
		UGBA Elective <sup>14</sup>		2
17-19				20
			Senior	
	Fall	Units	Spring	Units
CIV ENG 167		3 UGBA 102B		3
UGBA 103		4 UGBA 106		3
UGBA 104		3 CEE Extensions Electives <sup>10</sup>		3
CEE Extensions Electives <sup>10</sup>		3 CEE Extensions Electives <sup>10</sup>		3
Breadth - Arts and Literature/AC (Upper Div) <sup>3</sup>		4 Capstone Design <sup>11</sup>		4
M.E.T. Special Topics (UGBA 196) <sup>13</sup>		2 UGBA Elective <sup>14</sup>		2
19				18
Total Units: 148-150				

Total Units: 148-150

<sup>1</sup> MATH 1A may be fulfilled with a score of 3, 4 or 5 on the AP Calculus AB or BC exam, a score of 5, 6 or 7 on the IB Higher Level Math exam, or a grade of A, B or C on the A-Level Math H1, H2, H3, Pure Math or Further Math exam.

<sup>2</sup> CHEM 1A may be fulfilled with a score of 3, 4 or 5 on the AP Chemistry exam, a score of 5, 6 or 7 on the IB Higher Level Chemistry exam, or a grade of A, B or C on the A-Level Chemistry exam.

<sup>3</sup> ECON 1 and UGBA 107 will be accepted for the Social and Behavioral Sciences and Philosophy and Values breadth requirements, respectively, as exceptions for students in the M.E.T. Program. The Biological Science breadth requirement is waived for students in the M.E.T. Program. In order to satisfy the College of Engineering Humanities and Social Sciences requirement, two of the Breadth courses must be upper division. Some American Cultures courses will also fulfill the Arts & Literature or Historical Studies breadth requirement; use Requirements filters to search the Class Schedule (<http://classes.berkeley.edu>) for courses that apply. See College Requirements (<http://guide.berkeley.edu/archive/2019-20/undergraduate/degree-programs/civil-engineering-business-administration/#collegerequirementstext>) for further restrictions on breadth courses.

<sup>4</sup> Econ 1 may be fulfilled with scores of 4 or 5 on both the AP Microeconomics exam and AP Macroeconomics exam. However, the Social and Behavioral Sciences Breadth requirement cannot be fulfilled with AP exam scores.

<sup>5</sup> Reading & Composition part A may be fulfilled with a score of 4 or 5 on the AP English Language and Composition exam or the AP English Literature and Composition exam, or a score of 5, 6 or 7 on the IB Higher Level English Literature exam or the IB Higher Level English Language and Literature exam.

<sup>6</sup> MATH 1B may be fulfilled with a score of 4 or 5 on the AP Calculus BC exam, a score of 5, 6 or 7 on the IB Higher Level Math exam, or a grade of A, B or C on the A-Level Math H2, H3, Pure Math or Further Math exam.

<sup>7</sup> PHYSICS 7A may be fulfilled with a score of 5 on the AP Physics C Mechanics exam.

<sup>8</sup> Basic Science Elective - Choose one course from the following: BIOLOGY 1B, CHEM 1B, or CIV ENG 70.

<sup>9</sup> CEE Applications - Choose three courses (9 units) from the following: CIV ENG 103, CIV ENG 111, CIV ENG 120, CIV ENG 155, CIV ENG 175, CIV ENG 191.

<sup>10</sup> CEE Extensions - Complete nine (9) units chosen from upper division CIV ENG courses not being counted toward other engineering major requirements. Students may use up to three units of CIV ENG graduate courses numbered 200-295, taken Fall 2017 or later, toward their CEE Extensions units. Students must have a technical GPA of 3.0 or higher to obtain permission to enroll in CEE graduate courses. Students may receive up to three units of credit toward their CEE Extensions units for work on a research project in CIV ENG H194 (Honors Undergraduate Research).

<sup>11</sup> Capstone Design - Choose one course from the following: CIV ENG 105, CIV ENG 112, CIV ENG 122N and CIV ENG 122L, CIV ENG 123N and CIV ENG 123L, CIV ENG 153, CIV ENG 179, CIV ENG 180, CIV ENG 186.

<sup>12</sup> Students must take STAT C8, COMPSCI C8 or INFO C8 plus STAT 88 or UGBA 96 - Data Decisions to fulfill the statistics prerequisite for business and the data science requirement for CE. Both courses must be taken to satisfy the requirement, although they do not need to be taken in the same semester.

<sup>13</sup> M.E.T. Special Topics courses will count as upper division business units.

<sup>14</sup> Students must complete a minimum of 38 units of upper division business coursework. See UGBA Elective course list under "Major Requirements" tab.

<sup>15</sup> Engineering Fundamentals Elective - choose one course from the following: ENGIN 40, MEC ENG 40, MEC ENG 104, EECS 127, or COMPSCI C100.

Expand all course descriptions [+]Collapse all course descriptions [-]

## **CIV ENG 11 Engineered Systems and Sustainability 3 Units**

Terms offered: Spring 2020, Spring 2019, Spring 2018

An introduction to key engineered systems (e.g., energy, water supply, buildings, transportation) and their environmental impacts. Basic principles of environmental science needed to understand natural processes as they are influenced by human activities. Overview of concepts and methods of sustainability analysis. Critical evaluation of engineering approaches to address sustainability.

Engineered Systems and Sustainability: Read More [+]

### **Rules & Requirements**

**Prerequisites:** CHEM 1A and MATH 1A

### **Hours & Format**

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 8 weeks - 6 hours of lecture per week

### **Additional Details**

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Harley, Horvath, Nelson

Engineered Systems and Sustainability: Read Less [-]

## **CIV ENG 24 Freshman Seminars 1 Unit**

Terms offered: Spring 2020, Fall 2019, Spring 2019

The Berkeley Seminar Program has been designed to provide new students with the opportunity to explore an intellectual topic with a faculty member in a small-seminar setting. Berkeley seminars are offered in all campus departments, and topics vary from department to department and semester to semester.

Freshman Seminars: Read More [+]

### **Rules & Requirements**

**Repeat rules:** Course may be repeated for credit when topic changes.

### **Hours & Format**

**Fall and/or spring:** 15 weeks - 1 hour of seminar per week

### **Additional Details**

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** The grading option will be decided by the instructor when the class is offered. Final Exam To be decided by the instructor when the class is offered.

Freshman Seminars: Read Less [-]

## **CIV ENG C30 Introduction to Solid Mechanics 3 Units**

Terms offered: Fall 2020, Spring 2020, Fall 2019

A review of equilibrium for particles and rigid bodies. Application to truss structures. The concepts of deformation, strain, and stress. Equilibrium equations for a continuum. Elements of the theory of linear elasticity. The states of plane stress and plane strain. Solution of elementary elasticity problems (beam bending, torsion of circular bars). Euler buckling in elastic beams.

Introduction to Solid Mechanics: Read More [+]

### **Rules & Requirements**

**Prerequisites:** Mathematics 53 and 54 (may be taken concurrently); Physics 7A

**Credit Restrictions:** Students will receive no credit for Mechanical Engineering C85/Civil and Environmental Engineering C30 after completing Mechanical Engineering W85. A deficient grade in Mechanical Engineering W85 may be removed by taking Mechanical Engineering C85/Civil and Environmental Engineering C30.

### **Hours & Format**

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### **Summer:**

6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

10 weeks - 4.5 hours of lecture and 1.5 hours of discussion per week

### **Additional Details**

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Armero, Papadopoulos, Zohdi, Johnson

**Also listed as:** MEC ENG C85

Introduction to Solid Mechanics: Read Less [-]

## CIV ENG W30 Introduction to Solid Mechanics 3 Units

Terms offered: Summer 2020 8 Week Session, Summer 2019 8 Week Session, Summer 2018 8 Week Session

A review of equilibrium for particles and rigid bodies. Application to truss structures. The concepts of deformation, strain, and stress. Equilibrium equations for a continuum. Elements of the theory of linear elasticity. The states of plane stress and plane strain. Solution of elementary elasticity problems (beam bending, torsion of circular bars). Euler buckling in elastic beams.

Introduction to Solid Mechanics: Read More [+]

### Objectives & Outcomes

**Course Objectives:** To learn statics and mechanics of materials

### Student Learning Outcomes: -

Correctly draw free-body

-

Apply the equations of equilibrium to two and three-dimensional solids

-

Understand the concepts of stress and strain

-

Ability to calculate deflections in engineered systems

-

Solve simple boundary value problems in linear elastostatics (tension, torsion, beam bending)

### Rules & Requirements

**Prerequisites:** MATH 53 and MATH 54 (may be taken concurrently); PHYSICS 7A

**Credit Restrictions:** Students will receive no credit for MEC ENG W85 after completing MEC ENG C85. A deficient grade in MEC ENG W85 may be removed by taking MEC ENG C85.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of web-based lecture and 1 hour of web-based discussion per week

### Summer:

6 weeks - 7.5 hours of web-based lecture and 2.5 hours of web-based discussion per week

8 weeks - 6 hours of web-based lecture and 2 hours of web-based discussion per week

10 weeks - 4.5 hours of web-based lecture and 1.5 hours of web-based discussion per week

**Online:** This is an online course.

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Govindjee

**Also listed as:** MEC ENG W85

Introduction to Solid Mechanics: Read Less [-]

## CIV ENG 60 Structure and Properties of Civil Engineering Materials 3 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Introduction to structure and properties of civil engineering materials such as asphalt, cements, concrete, geological materials (e.g. soil and rocks), steel, polymers, and wood. The properties range from elastic, plastic and fracture properties to porosity and thermal and environmental responses. Laboratory tests include evaluation of behavior of these materials under a wide range of conditions.

Structure and Properties of Civil Engineering Materials: Read More [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Monteiro, Ostertag

Structure and Properties of Civil Engineering Materials: Read Less [-]

## CIV ENG 70 Engineering Geology 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Principles of physical and structural geology; the influence of geological factors on engineering works and the environment. Field trip.

Engineering Geology: Read More [+]

### Rules & Requirements

**Prerequisites:** CHEM 1A (may be taken concurrently)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

**Summer:** 8 weeks - 6 hours of lecture and 4 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Glaser, Sitar

Engineering Geology: Read Less [-]

## CIV ENG 88B Time Series Analysis: Sea Level Rise and Coastal Flooding 2 Units

Terms offered: Spring 2017

In this course, we will pursue analysis of long-term records of coastal water levels in the context of sea level rise. We will cover the collection, evaluation, visualization and analysis of time series data using long-term records of sea levels from coastal sites around the world. Specific topics will include extreme events and distributions, frequency-based descriptions, averaging, filtering, harmonic analysis, trend identification, extrapolations, and decision-making under uncertainty.

Time Series Analysis: Sea Level Rise and Coastal Flooding: Read More [+]

### Rules & Requirements

**Prerequisites:** Concurrent or prior enrollment in Foundations of Data Science (COMPSCI C8 / INFO C8 / STAT C8) and MATH 1A

### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of lecture and 1 hour of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructor:** Stacey

Time Series Analysis: Sea Level Rise and Coastal Flooding: Read Less [-]

## CIV ENG C88 Data Science for Smart Cities 2 Units

Terms offered: Spring 2020

Cities become more dependent on the data flows that connect infrastructures between themselves, and users to infrastructures. Design and operation of smart, efficient, and resilient cities nowadays require data science skills. This course provides an introduction to working with data generated within transportation systems, power grids, communication networks, as well as collected via crowd-sensing and remote sensing technologies, to build demand- and supply-side urban services based on data analytics.

Data Science for Smart Cities: Read More [+]

### Objectives & Outcomes

**Course Objectives:** Become familiar with urban big data and sensor data collection techniques.

Develop intuition in various machine learning classification algorithms, as well as regression modelling.

Develop intuition in various machine learning classification algorithms, as well as regression modelling.

Foster critical thinking about real-world actionability from analytics.

Learn how to use data science techniques in urban decision-making and scenario generation.

**Student Learning Outcomes:** Develop capabilities in a range of data science techniques.

Gain the ability to solve problems in smart city research and practice.

Think critically about how to assess analytics for cities.

Use data analytics in the smart city domain.

### Rules & Requirements

**Prerequisites:** This course is a Data Science connector course and is meant to be taken concurrent with or after Foundations of Data Science COMPSCI C8/INFO C8/STAT C8. Students may take more than one Data Science connector course if they wish, concurrently or after taking the C8 course

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructor:** Gonzalez

**Formerly known as:** Civil and Environmental Engineering 88

**Also listed as:** CY PLAN C88

Data Science for Smart Cities: Read Less [-]



## CIV ENG 92 Introduction to Civil and Environmental Engineering 1 Unit

Terms offered: Fall 2019, Fall 2018, Fall 2017

A course designed to familiarize the entering student with the nature and scope of civil and environmental engineering and its component specialty areas.

Introduction to Civil and Environmental Engineering: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Introduction to Civil and Environmental Engineering: [Read Less](#) [-]

## CIV ENG 92A Design for Future Infrastructure Systems 2 Units

Terms offered: Fall 2020

Hands-on engineering design experience for creating future infrastructure systems. Intelligent infrastructure systems leverage data and computational to enhance sustainability and resilience for smart cities of the future. Student teams identify a challenge with current transportation, energy, water, waste, and/or the built infrastructure. Student teams design and prototype an innovation that solves this problem using maker resources, e.g. 3D printing, laser cutters, and open-source electronics. The project will be executing via the "Design Sprint" process, which is popular in agile development and Silicon Valley. Students present projects to guest judges from industry. Course is an introductory design experience for first-year students.

Design for Future Infrastructure Systems: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Alternative to final exam.

**Instructor:** Moura

Design for Future Infrastructure Systems: [Read Less](#) [-]

## CIV ENG 93 Engineering Data Analysis 3 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Application of the concepts and methods of probability theory and statistical inference to CEE problems and data; graphical data analysis and sampling; elements of set theory; elements of probability theory; random variables and expectation; simulation; statistical inference. Use of computer programming languages for analysis of CEE-related data and problems. The course also introduces the student to various domains of uncertainty analysis in CEE.

Engineering Data Analysis: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** ENGIN 7 or COMPSCI C8 / INFO C8 / STAT C8. Student should consult instructor prior to enrolling

**Credit Restrictions:** Students will receive no credit after taking Statistics 25.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

**Summer:** 6 weeks - 5 hours of lecture and 7.5 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Hansen, Rubin, Walker

Engineering Data Analysis: [Read Less](#) [-]

## CIV ENG 98 Supervised Group Study and Research 1 - 3 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Supervised group study and research by lower division students.

Supervised Group Study and Research: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Consent of instructor

**Credit Restrictions:** Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-3 hours of directed group study per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Supervised Group Study and Research: Read Less [\[-\]](#)

## CIV ENG 99 Supervised Independent Study and Research 1 - 4 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Supervised independent study by lower division students.

Supervised Independent Study and Research: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Freshman or sophomore standing and consent of instructor. Minimum grade point average of 3.3 required

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of independent study per week

**Summer:** 8 weeks - 2-7.5 hours of independent study per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Supervised Independent Study and Research: Read Less [\[-\]](#)

## CIV ENG 100 Elementary Fluid Mechanics 4 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Fluid statics and dynamics, including laboratory experiments with technical reports. Fundamentals: integral and differential formulations of the conservation laws are solved in special cases such as boundary layers and pipe flow. Flow visualization and computation techniques are introduced using Matlab. Empirical equations are used for turbulent flows, drag, pumps, and open channels. Principles of empirical equations are also discussed: dimensional analysis, regression, and uncertainty.

Elementary Fluid Mechanics: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** PHYSICS 7A, MATH 53, and ENGIN 7 (may be taken concurrently); and CIV ENG C30 / MEC ENG C85 recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of laboratory per week

**Summer:** 8 weeks - 6 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Chow, Stacey, Variano

Elementary Fluid Mechanics: Read Less [\[-\]](#)

## CIV ENG 101 Fluid Mechanics of Rivers, Streams, and Wetlands 3 Units

Terms offered: Fall 2014, Spring 2013, Fall 2010

Analysis of steady and unsteady open-channel flow and application to rivers and streams. Examination of mixing and transport in rivers and streams. Effects of channel complexity. Floodplain dynamics and flow routing. Interaction of vegetation and fluid flows. Freshwater and tidal marshes. Sediment transport in rivers, streams, and wetlands. Implications for freshwater ecosystem function.

Fluid Mechanics of Rivers, Streams, and Wetlands: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 100, MEC ENG 106, or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Variano

Fluid Mechanics of Rivers, Streams, and Wetlands: Read Less [\[-\]](#)

## CIV ENG 103 Introduction to Hydrology 3 Units

Terms offered: Fall 2018, Fall 2017, Spring 2017

Course addresses principles and practical aspects of hydrology. Topics in introduction to hydrology include hydrologic cycle, precipitation, evaporation, infiltration, snow and snowmelt, and streamflow; introduction to geomorphology, GIS (Geographic Information Systems) applications, theory of unit hydrograph, frequency analysis, flood routing through reservoirs and rivers; introduction to rainfall-runoff analyses, watershed modeling, urban hydrology, and introduction to groundwater hydrology.

Introduction to Hydrology: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 93 and CIV ENG 100

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Thompson

Introduction to Hydrology: Read Less [-]

## CIV ENG C103N Terrestrial Hydrology 4 Units

Terms offered: Spring 2020, Spring 2019, Spring 2017, Spring 2014

A quantitative introduction to the hydrology of the terrestrial environment including lower atmosphere, watersheds, lakes, and streams. All aspects of the hydrologic cycle, including precipitation, infiltration, evapotranspiration, overland flow, streamflow, and groundwater flow. Chemistry and dating of groundwater and surface water. Development of quantitative insights through problem solving and use of simple models. This course requires one field experiment and several group computer lab assignments.

Terrestrial Hydrology: Read More [+]

### Rules & Requirements

**Prerequisites:** CHEM 1A, MATH 1A, MATH 1B, and PHYSICS 7A; or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructor:** Larsen

**Also listed as:** ESPM C130/GEOG C136

Terrestrial Hydrology: Read Less [-]

## CIV ENG 105 Water and Wind - Design for a Variable Environment 3 Units

Terms offered: Spring 2020, Fall 2017, Fall 2016

Hands-on design course in applied fluid mechanics, hydrology and water resources. Course goes beyond basic examples of fluid flow to develop environmental engineering solutions to real-world problems. A class team project is used to (1) explore the design process and project management; and (2) to integrate concepts from hydrology and fluid mechanics with structural, geotechnical and/or transportation engineering for a holistic design approach. Specific project topics vary with offering. Example topics include: engineering for air quality, design for sea-level rise mitigation, and development of alternative water supplies to address scarcity and post-disaster management.

Water and Wind - Design for a Variable Environment: Read More [+]

### Objectives & Outcomes

**Course Objectives:** To develop and defend design criteria

To gain familiarity with the process of design and project management, from proposal writing to preliminary design delivery

To integrate fundamental engineering principles, subject to the needs and constraints of a specific design.

### Rules & Requirements

**Prerequisites:** CIV ENG 100 and CIV ENG 103; or instructor's permission

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructors:** Chow, Stacey, Variano

Water and Wind - Design for a Variable Environment: Read Less [-]

## CIV ENG C106 Air Pollution 3 Units

Terms offered: Spring 2020, Spring 2018, Spring 2017

This course is an introduction to air pollution and the chemistry of earth's atmosphere. We will focus on the fundamental natural processes controlling trace gas and aerosol concentrations in the atmosphere, and how anthropogenic activity has affected those processes at the local, regional, and global scales. Specific topics include stratospheric ozone depletion, increasing concentrations of green house gasses, smog, and changes in the oxidation capacity of the troposphere.

Air Pollution: Read More [+]

### Rules & Requirements

**Prerequisites:** Chemistry 1A-1B, Physics 8A or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Goldstein

**Also listed as:** EPS C180/ESPM C180

Air Pollution: Read Less [-]

## CIV ENG 107 Climate Change Mitigation 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

Assessment of technological options for responding to climate change. Overview of climate-change science; sources, sinks, and atmospheric dynamics of greenhouse gases. Current systems for energy supply and use. Renewable energy resources, transport, storage, and transformation technologies. Technological opportunities for improving end-use energy efficiency. Recovery, sequestration, and disposal of greenhouse gases. Societal context for implementing engineered responses.

Climate Change Mitigation: Read More [+]

### Rules & Requirements

**Prerequisites:** Upper division or graduate standing in engineering or physical science, or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Climate Change Mitigation: Read Less [-]

## CIV ENG 110 Water Systems of the Future 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2017

This course will familiarize students with the complex infrastructure used to meet human water demands; competing uses and demands; water and wastewater infrastructure; technologies to enable recovery of water, energy, and other resources from wastewater; supply planning; trends and forecasting; costs, pricing and financing; environmental justice; methods to assess sustainability; regulatory, policy and institutional challenges; and water's contribution to other sectors (e.g., energy, food, buildings). Innovation, both barriers and opportunities, will be highlighted. California and the U.S. will be emphasized but global challenges will be discussed. Students will study, critique, and recommend improvements for a real-world system.

Water Systems of the Future: Read More [+]

### Objectives & Outcomes

**Course Objectives:** Consider costs and tradeoffs in water supply planning under uncertainty for real-world water systems  
Critically evaluate water planning and innovation potential for real-world utilities given future uncertainties and competing priorities.  
Explore the innovation ecosystem in the water sector, its opportunities and challenges, and analyze case studies  
Introduce the technologies that are currently in use for treating and managing water and wastewater, as well as innovations that have the potential to dramatically change water infrastructure.  
Provide overview and examples of concepts and methods for analyzing the sustainability of water systems  
Provide overview of the complex infrastructure systems that supply and manage water and wastewater.

**Student Learning Outcomes:** Ability to apply knowledge of mathematics, science, and engineering. MODERATE  
Ability to communicate effectively. EXTENSIVE  
Ability to design a system, component, or process to meet desired needs. MODERATE  
Ability to function on multi-disciplinary teams. EXTENSIVE  
Ability to identify, formulate and solve engineering problems. MODERATE  
Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. MODERATE  
Knowledge of contemporary issues. EXTENSIVE  
Recognition of the need for, and an ability to engage in life-long learning. EXTENSIVE  
Understand the impact of engineering solutions in a global and societal context. EXTENSIVE  
Understanding of professional and ethical responsibility. EXTENSIVE

### Rules & Requirements

**Prerequisites:** Upper division status or consent of the instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Nelson

Water Systems of the Future: Read Less [-]

## CIV ENG 111 Environmental Engineering 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Quantitative overview of air and water contaminants and their engineering control. Elementary environmental chemistry and transport. Reactor models. Applications of fundamentals to selected current issues in water quality engineering, air quality engineering, air quality engineering, and hazardous waste management.

Environmental Engineering: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Upper division standing in engineering or physical sciences, or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Alvarez-Cohen, Nelson, Sedlak

Environmental Engineering: Read Less [\[-\]](#)

## CIV ENG 111L Water and Air Quality Laboratory 1 Unit

Terms offered: Fall 2019, Fall 2018, Fall 2017

This laboratory course is designed to accompany the lecture topics in Civil Engineering 111. Each laboratory activity will provide an opportunity to understand key concepts in water and air quality through hands-on experimentation. Laboratory topics include phase partitioning, acid/base reactions, redox reactions, biochemical oxygen demand, absorption, gas transfer, reactor hydraulics, particle destabilization, disinfection, and combustion emissions.

Water and Air Quality Laboratory: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 111 (may be taken concurrently)

### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Alvarez-Cohen, Nelson, Sedlak

Water and Air Quality Laboratory: Read Less [\[-\]](#)

## CIV ENG 112 Environmental Engineering Design 3 Units

Terms offered: Spring 2017, Spring 2016, Spring 2015

Engineering design and project management of environmental systems. Students will complete a design project focusing on pollution control in a selected environmental system. Lectures and project activities will address process design, economic optimization, legal and institutional constraints on design, and project management. Additional components of design (e.g., hydraulics, engineering sustainability, plant structures) will be included.

Environmental Engineering Design: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 100 and CIV ENG 111

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Environmental Engineering Design: Read Less [\[-\]](#)



## CIV ENG 113 Ecological Engineering for Water Quality Improvement 3 Units

Terms offered: Spring 2019, Spring 2017, Fall 2003

Ecological engineering approaches for treating contaminated water using natural processes to improve water quality. Emphasis on combining basic science and engineering approaches to understand the fundamental processes that govern the effectiveness of complex natural treatment systems. Applications include constructed wetlands, waste stabilization ponds, stormwater bioretention, decentralized wastewater management, ecological sanitation. Laboratory sessions will consist of design and monitoring of laboratory and full-scale natural treatment systems, including a range of water quality measurements.

Ecological Engineering for Water Quality Improvement: Read More [\[+\]](#)

### Objectives & Outcomes

**Course Objectives:** Become familiar with common applications of natural treatment systems through lectures, reading materials, laboratory activities, and field trips

Develop a solid understanding of the fundamental processes in ecological engineering approaches to natural treatment systems that govern the removal or transformation of contaminants in water

Learn common design approaches for waste stabilization ponds and wetlands, as well as their necessary operation and maintenance activities Measure key water quality parameters and evaluate the performance of mesocosm ponds and wetlands based on the data collected throughout the semester

Understand and appreciate the complexity of these systems compared to mechanical treatment systems

**Student Learning Outcomes:** Ability to apply knowledge of mathematics, science, and engineering. EXTENSIVE  
Ability to communicate effectively. MODERATE  
Ability to design a system, component, or process to meet desired needs. EXTENSIVE  
Ability to design and conduct experiments, as well as to analyze and interpret data. EXTENSIVE  
Ability to function on multi-disciplinary teams. MODERATE  
Ability to identify, formulate and solve engineering problems. EXTENSIVE  
Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. EXTENSIVE  
Knowledge of contemporary issues. MODERATE  
Recognition of the need for, and an ability to engage in life-long learning. MODERATE  
Understand the impact of engineering solutions in a global and societal context. MODERATE  
Understanding of professional and ethical responsibility. MODERATE

### Rules & Requirements

**Prerequisites:** CIV ENG 111 or consent of instructor

**Credit Restrictions:** Civ Eng 113N

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructor:** Nelson

**Formerly known as:** Civil and Environmental Engineering 113N

## CIV ENG 114 Environmental Microbiology 3 Units

Terms offered: Spring 2016, Spring 2015, Fall 2014

The scope of modern environmental engineering requires a fundamental knowledge of microbial processes with specific application to water, wastewater and the environmental fate of pollutants. This course will cover basic microbial physiology, biochemistry, metabolism, growth energetics and kinetics, ecology, pathogenicity, and genetics for application to both engineered and natural environmental systems.

Environmental Microbiology: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CHEM 1A and CHEM 1B

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Alvarez-Cohen

Environmental Microbiology: Read Less [\[-\]](#)

## CIV ENG 115 Water Chemistry 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

The application of principles of inorganic, physical, and dilute solution equilibrium chemistry to aquatic systems, both in the aquatic environment and in water and wastewater treatment processes.

Water Chemistry: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Upper division or graduate standing in engineering or physical science, or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Sedlak

Water Chemistry: Read Less [\[-\]](#)

## CIV ENG C116 Chemistry of Soils 3 Units

Terms offered: Fall 2020, Spring 2018, Spring 2017

Chemical mechanisms of reactions controlling the fate and mobility of nutrients and pollutants in soils. Role of soil minerals and humus in geochemical pathways of nutrient bioavailability and pollutant detoxification. Chemical modeling of nutrient and pollutant soil chemistry. Applications to soil acidity and salinity.

Chemistry of Soils: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 111

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Also listed as:** ESPM C128

Chemistry of Soils: Read Less [-]

## CIV ENG 120 Structural Engineering 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

Introduction to design and analysis of structural systems. Loads and load placement. Proportioning of structural members in steel, reinforced concrete, and timber. Structural analysis theory. Hand and computer analysis methods, validation of results from computer analysis. Applications, including bridges, building frames, and long-span cable structures.

Structural Engineering: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG C30 / MEC ENG C85 and CIV ENG 60 (may be taken concurrently)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Moehle

Structural Engineering: Read Less [-]

## CIV ENG 121 Structural Analysis 3 Units

Terms offered: Fall 2018, Fall 2017, Fall 2016

Theory and application of structural analysis. Stiffness and flexibility methods, with emphasis on the direct stiffness method. Equilibrium and compatibility. Virtual work. Response of linear and simple nonlinear structures to static loads. Use of computer programs for structural analysis. Modeling of two- and three-dimensional structures. Verification and interpretation of structural response.

Structural Analysis: Read More [+]

### Objectives & Outcomes

**Course Objectives:** Collapse load factor determination of simple structures by lower bound theorem of plastic analysis.

Consistent process of writing equilibrium and compatibility relations for small and large structures permitting solution by hand and by matrix algebra software. Identification of degree of static indeterminacy. Force-deformation relations for truss and frame elements. Modeling of structures. Nodes, elements, loading, organization of information for describing structural model, element properties and loading.

Solution of simple statically indeterminate structures by the force method of analysis. Understanding of structure flexibility and flexibility coefficients. Treatment of nodal loads and non-mechanical element deformations.

Solution of statically indeterminate structures of any size by the displacement method of analysis. Stiffness coefficients. Treatment of element and thermal loads. Computer implementation in the form of the direct stiffness approach.

Structural systems and their use in buildings and bridges. Parametric studies.

Work and energy principles. Principles of virtual work and complementary virtual work. Relation between virtual work principles and equilibrium/compatibility relations.

**Student Learning Outcomes:** Analyze any type of truss and frame structure with the displacement method of analysis by hand and by computer. Determine internal forces, deformations, global displacements, support reactions. Error checking of computer analysis results (ABET Learning Goals: 1, 3, 5).

Determine the collapse load of simple perfectly-plastic truss and frame structures under equilibrium considerations (ABET Learning Goals: 1, 3, 5).

Identify the structural response contribution of individual elements and identify the effect of changes in element properties on the results (ABET Learning Goals: 1, 3, 11).

Perform analysis of statically determinate truss and frame structures under equilibrium and compatibility considerations. Perform equilibrium checks of given results under given loading. Perform compatibility checks for given deformations (ABET Learning Goals: 1, 3, 5).

Recognize force flow in beam, arch and cable structures and their derivatives, like suspension bridges, cable-stayed bridges, roofs and high-rise buildings (ABET Learning Goals: 3, 8, 10, 11).

Understand basic structural systems and their use throughout history and in modern times. (ABET Learning Goals: 3, 8, 10, 11)

Understand structural modeling.

Be able to assess the complexity of a structural model and identify number of unknowns in the solution of the structural response to given loading. Be able to select the most appropriate solution method for hand calculations (ABET Learning Goals: 1, 3, 5).

### Rules & Requirements

**Prerequisites:** CIV ENG 120 and CIV ENG 130

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of

## CIV ENG 122 Design of Steel Structures 3 Units

Terms offered: Fall 2020, Fall 2015, Spring 2012

A first course in steel design focusing on basic principles. Introduction to materials and methods of steel construction; behavior and design of tension members, compression members, flexural members and beam-columns; design of welds, bolts, shear connections, and moment connections. Includes laboratory sessions to illustrate member behavior. By the end of the course students should be able to design simple steel structures subjected to static gravity and lateral loads. Design teams will conceive, determine design loads, and conduct a preliminary and final design of a structural system and its foundation. Teams will prepare a report containing project description, design criteria, structural drawings, and supporting calculations.

Design of Steel Structures: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 120

**Credit Restrictions:** Students will receive no credit for CIV ENG 122 after completing CIV ENG 122N, or CIV ENG 122. A deficient grade in CIV ENG 122 may be removed by taking CIV ENG 122N, or CIV ENG 122.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Becker

Design of Steel Structures: Read Less [-]

## CIV ENG 122L Structural Steel Design Project 1 Unit

Terms offered: Spring 2020, Spring 2019, Spring 2018

Introduction to one or more comprehensive structural design problems. Design teams will conceive structural system; determine design loads; conduct preliminary and final design of structure and its foundation; prepare construction cost estimate; prepare final report containing project description, design criteria, cost estimate, structural drawings, and supporting calculations; and make "client" presentations as required. Structural Steel Design Project: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 122N

**Credit Restrictions:** Students will receive no credit for Civil and Environmental Engineering 122L after taking Civil and Environmental Engineering 122 or 123L.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Instructor:** Becker

Structural Steel Design Project: Read Less [-]

## CIV ENG 122N Design of Steel Structures 3 Units

Terms offered: Fall 2019, Fall 2018, Fall 2017

Introduction to materials and methods of steel construction; behavior and design of tension members, compression members, flexural members and beam-columns; design of welds, bolts, shear connections and moment connections; design of spread footings or other foundation elements, introduction to design of earthquake-resistant steel structures including concentrically braced frames and moment frames.

Design of Steel Structures: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 120

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Becker

**Formerly known as:** Civil and Environmental Engineering 122

Design of Steel Structures: Read Less [-]

## CIV ENG 123 Design of Reinforced Concrete Structures 3 Units

Terms offered: Fall 2015, Spring 2012, Fall 2011

Introduction to materials and methods of reinforced concrete design and construction; behavior and design of reinforced concrete beams and one-way slabs considering deflections, moment, shear, and reinforcement development requirements; behavior and design of columns; design of spread footings; design of earthquake-resistant structures; laboratory sessions to illustrate member behavior, to solve problem sets, and to develop and present the preliminary designs for a design project.

Design of Reinforced Concrete Structures: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 120

**Credit Restrictions:** Students will receive no credit for CIV ENG 123 after completing CIV ENG 123N, or CIV ENG 123. A deficient grade in CIV ENG 123 may be removed by taking CIV ENG 123N, or CIV ENG 123.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Moehle

Design of Reinforced Concrete Structures: Read Less [\[-\]](#)

## CIV ENG 123L Structural Concrete Design Project 1 Unit

Terms offered: Spring 2020, Spring 2019, Spring 2018

Introduction to one or more comprehensive structural design problems. Design teams will conceive structural system; determine design loads; conduct preliminary and final design of structure and its foundation; prepare construction cost estimate; prepare final report containing project description, design criteria, cost estimate, structural drawings, and supporting calculations; make "client" presentations as required.

Structural Concrete Design Project: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 123N

**Credit Restrictions:** Students will receive no credit for Civil and Environmental Engineering 123L after taking Civil and Environmental Engineering 122L or 123.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Instructors:** Moehle, Mosalam

Structural Concrete Design Project: Read Less [\[-\]](#)

## CIV ENG 123N Design of Reinforced Concrete Structures 3 Units

Terms offered: Fall 2019, Fall 2018, Fall 2017

Introduction to materials and methods of reinforced concrete construction; behavior and design of reinforced concrete beams and one-way slabs considering deflections, flexure, shear, and anchorage; behavior and design of columns; design of spread footings or other foundation elements; design of earthquake-resistant structures; introduction to prestressed concrete.

Design of Reinforced Concrete Structures: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 120

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Moehle, Mosalam

**Formerly known as:** Civil and Environmental Engineering 123

Design of Reinforced Concrete Structures: Read Less [\[-\]](#)

## CIV ENG 124 Structural Design in Timber 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Characteristics and properties of wood as a structural material; design and detailing of structural elements and entire structures of wood. Topics include allowable stresses, design and detailing of solid sawn and glulam beams and columns, nailed and bolted connections, plywood diaphragms and shear walls. Case studies.

Structural Design in Timber: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 120

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Filippou

Structural Design in Timber: Read Less [-]

## CIV ENG 126 Engineering Dynamics and Vibrations 3 Units

Terms offered: Fall 2020, Fall 2019

Introduction to the dynamics of particles, rigid bodies, and deformable solids in civil engineering. Newtonian and Lagrangian formulations. Vibration of particles and rigid body systems: natural frequencies and mode shapes, free and forced vibration. Vibration of continuous systems: bars, strings, beams. Modeling and numerical simulation methods..

Engineering Dynamics and Vibrations: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG C30 / MEC ENG C85 and ENGIN 7; or consent of instructor

**Credit Restrictions:** Students will receive no credit for CIV ENG 126 after completing MEC ENG 104. A deficient grade in CIV ENG 126 may be removed by taking MEC ENG 104, or MEC ENG 104.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Konstantinidis, DeJong

Engineering Dynamics and Vibrations: Read Less [-]

## CIV ENG 130N Mechanics of Structures 3 Units

Terms offered: Spring 2019, Summer 2018 8 Week Session, Spring 2018

Elastic and plastic stress and deformation analysis of bars, shafts, beams, and columns; energy and variational methods; plastic analysis of structures; stability analysis of structures; computer-aided mathematical techniques for solution of engineering problems and modular computer programming methods.

Mechanics of Structures: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG C30 / MEC ENG C85; and CIV ENG 60 or MAT SCI 45

**Credit Restrictions:** Students will receive no credit for 130N after taking 130.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

**Summer:** 8 weeks - 4 hours of lecture and 6 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Filippou, Govindjee, Li

Mechanics of Structures: Read Less [-]



## CIV ENG 132 Applied Structural Mechanics 3 Units

Terms offered: Spring 2020

Concepts of theory of solid mechanics: three dimensional stress, strain, and material response; elastic and inelastic boundary value problems; fracture, fatigue, and geometric instability. Problems in advanced strength of materials; thin plate and axis-symmetric shell theory.

Applied Structural Mechanics: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG C30 / MEC ENG C85, MATH 53 and MATH 54

**Credit Restrictions:** Students will receive no credit for CivEng 132 after CivEng 130N.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 8 weeks - 6 hours of lecture and 2 hours of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Govindjee, Li, Konstantinidis

Applied Structural Mechanics: Read Less [\[-\]](#)

## CIV ENG C133 Engineering Analysis Using the Finite Element Method 3 Units

Terms offered: Spring 2020, Fall 2019, Spring 2019

This is an introductory course on the finite element method and is intended for seniors in engineering and applied science disciplines. The course covers the basic topics of finite element technology, including domain discretization, polynomial interpolation, application of boundary conditions, assembly of global arrays, and solution of the resulting algebraic systems. Finite element formulations for several important field equations are introduced using both direct and integral approaches. Particular emphasis is placed on computer simulation and analysis of realistic engineering problems from solid and fluid mechanics, heat transfer, and electromagnetism. The course uses FEMLAB, a multiphysics MATLAB-based finite element program that possesses a wide array of modeling capabilities and is ideally suited for instruction. Assignments will involve both paper- and computer-based exercises. Computer-based assignments will emphasize the practical aspects of finite element model construction and analysis.

Engineering Analysis Using the Finite Element Method: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Engineering 7 or 77 or Computer Science 61A; Mathematics 53 and 54; senior status in engineering or applied science

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Also listed as:** MEC ENG C180

Engineering Analysis Using the Finite Element Method: Read Less [\[-\]](#)

## CIV ENG 140 Failure Mechanisms in Civil Engineering Materials 3 Units

Terms offered: Spring 2013, Spring 2010, Spring 2009

The failure mechanisms in civil engineering materials (cement-based materials, metallic- and polymer-based materials) are associated with processing, microstructure, stress states, and environmental changes. Fracture mechanics of brittle, quasi-brittle, and ductile materials; cracking processes in monolithic, particulate, and fiber reinforced materials; examples of ductile/brittle failure transitions in civil engineering structures; retrofitting of existing structures; non-destructive techniques for damage detection.

Failure Mechanisms in Civil Engineering Materials: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 60

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Ostertag

Failure Mechanisms in Civil Engineering Materials: Read Less [\[-\]](#)

## CIV ENG 153 Transportation Facility Design 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

A capstone class with the objective to design transportation facilities based on operational capacity, site constraints, and environmental design considerations. Emphasis on airports, including landside and airside elements, and environmental assessment and mitigation techniques.

Transportation Facility Design: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 155

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Hansen

Transportation Facility Design: Read Less [\[-\]](#)

## CIV ENG 155 Transportation Systems Engineering 3 Units

Terms offered: Fall 2019, Spring 2019, Spring 2018

Operation, management, control, design, and evaluation of passenger and freight transportation systems. Their economic role. Demand analysis. Overall logistical structure. Performance models and modeling techniques: time-space diagrams, queuing theory, network analysis, and simulation. Design of control strategies for simple systems. Feedback effects. Paradoxes. Transportation impact modeling; noise; air pollution. Multi-criteria evaluation and decision making. Financing and politics. Transportation Systems Engineering: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Sophomore standing in engineering or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Cassidy, Daganzo, Hansen, Kanafani, Madanat

Transportation Systems Engineering: Read Less [\[-\]](#)

## CIV ENG 156 Infrastructure Planning and Management 3 Units

Terms offered: Fall 2014, Spring 2014, Fall 2011

This course focuses on physical infrastructure systems that support society, including transportation, communications, power, water, and waste. These are complex, large-scale systems that must be planned and managed over a long-term horizon. Economics-based, analytical tools are covered, including topics of supply, demand, and evaluation. Problem sets, case studies, and a class project provide for hands-on experience with a range of infrastructure systems, issues, and methods of analysis. Infrastructure Planning and Management: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** MATH 1A, MATH 1B, and CIV ENG 93

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Walker

Infrastructure Planning and Management: Read Less [\[-\]](#)

## CIV ENG 165 Concrete Materials, Construction, and Sustainability 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

Concrete materials: cements, supplementary cementitious materials, water, and admixtures. Sustainability analysis of concrete materials and mixtures. Development of special concretes: self-leveling concrete, high-performance concrete, and mass concrete. Consideration of sustainability of concrete construction methods used for buildings, highways, airfields, bridges, dams and other hydraulic structures. Non-destructive methods. Discussion of long-term durability. Comprehensive group projects. Concrete Materials, Construction, and Sustainability: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 60

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Monteiro

Concrete Materials, Construction, and Sustainability: Read Less [-]

## CIV ENG 166 Construction Engineering 3 Units

Terms offered: Fall 2018, Spring 2016, Fall 2014

Introduction to construction engineering and field operations. The construction industry, construction methods and practice, productivity improvement, equipment selection, site layout formwork, erection of steel and concrete structures. Labs demonstrate the concepts covered. Field trips to local construction projects.

Construction Engineering: Read More [+]

### Rules & Requirements

**Prerequisites:** Upper division standing; CIV ENG 167 recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Horvath

Construction Engineering: Read Less [-]

## CIV ENG 167 Engineering Project Management 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Principles of economics, decision making, and law applied to company and project management. Business ownership, liability and insurance, cash flow analysis, and financial management. Project life-cycle, design-construction interface, contracts, estimating, scheduling, cost control. Engineering Project Management: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 93 (can be taken concurrently)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Ibbs, Tommelein

Engineering Project Management: Read Less [-]

## CIV ENG 170A Infrastructure Sensing and Modeling 3 Units

Terms offered: Fall 2020

Introduction to sensing and modeling of infrastructure system; Imagery analysis (point clouds, lidar, structure for motion, satellite); Geophysics (Synthetic-aperture radar analysis, time histories analyses); Sensor systems (distributed fiber optics, wireless sensor network, MEMS, conventional); Structural health monitoring and analysis; Infrastructure network analysis (graph theory, GIS, simulations); entrepreneurship in infrastructure and smart cities industry.

Infrastructure Sensing and Modeling: Read More [+]

### Rules & Requirements

**Prerequisites:** ENGIN 7, CIV ENG C30, and CIV ENG 93 or equivalents

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructors:** Soga, Zekkos, Kayen

Infrastructure Sensing and Modeling: Read Less [-]

## CIV ENG 171 Rock Mechanics 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2017

Geological and geophysical exploration for structures in rock; properties and behavior of rock masses; rock slope stability; geological engineering of underground openings; evaluation of rock foundations, including dams.

Rock Mechanics: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 70 or an introductory course in physical geology; and upper division standing in engineering

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Glaser

Rock Mechanics: Read Less [-]

## CIV ENG C172 Remote Sensing of the Environment 3 Units

Terms offered: Fall 2020, Spring 2001, Fall 1999

The course will introduce junior/senior undergraduate students to the basic physical concepts of remote sensing as they relate to different earth surface processes. It will introduce students to a variety of recently developed ground, airborne, and satellite instruments and their applications to monitor and analyze environmental processes. These include active (e.g., Lidar), and passive (radiometers) sensors, optical (e.g., Landsat, MODIS), microwave (e.g., SMAP), and gravitational (e.g., GRACE) satellites.

Remote Sensing of the Environment: Read More [+]

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for ESPM C172 after completing CIV ENG 172, or ESPM 172. A deficient grade in ESPM C172 may be removed by taking CIV ENG 172, or ESPM 172.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Girotto

**Also listed as:** ESPM C172

Remote Sensing of the Environment: Read Less [-]

## CIV ENG 173 Groundwater and Seepage 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Introduction to principles of groundwater flow, including steady and transient flow through porous media, numerical analysis, pumping tests, groundwater geology, contaminant transport, and design of waste containment systems.

Groundwater and Seepage: Read More [+]

### Rules & Requirements

**Prerequisites:** Senior standing in engineering or science; CIV ENG 100 recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Rubin, Sitar

Groundwater and Seepage: Read Less [-]

## CIV ENG 174 Engineering Geomatics 3 Units

Terms offered: Summer 2015 First 6 Week Session, Summer 2014 10 Week Session, Summer 2014 First 6 Week Session

Engineering Geomatics is a field that integrates collections, processing, and analysis of digital geospatial data. This new field is anchored in the established field of geodetics that describes the complex shape of the Earth, elements and usage of topographic data and maps. Basic and advanced GPS satellite mapping. Digital globe technology. Advanced laser-LIDAR mapping. Quantitative terrain modeling, change detection, and analysis. Hydrogeomatics-seafloor mapping.

Engineering Geomatics: Read More [+]

### Hours & Format

**Summer:** 6 weeks - 6 hours of lecture and 5 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Engineering Geomatics: Read Less [-]

## CIV ENG 175 Geotechnical and Geoenvironmental Engineering 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

Soil formation and identification. Engineering properties of soils. Fundamental aspects of soil characterization and response, including soil mineralogy, soil-water movement, effective stress, consolidation, soil strength, and soil compaction. Use of soils and geosynthetic materials in geotechnical and geoenvironmental applications. Introduction to site investigation techniques. Laboratory testing and evaluation of soil composition and properties.

Geotechnical and Geoenvironmental Engineering: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG C30 / MEC ENG C85 (may be taken concurrently); CIV ENG 100 recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Bray, Sitar, Soga

Geotechnical and Geoenvironmental Engineering: Read Less [-]

## CIV ENG 176 Environmental Geotechnics 3 Units

Terms offered: Spring 2016, Spring 2015, Spring 2014

Principles of environmental geotechnics applied to waste encapsulation and remediation of contaminated sites. Characterization of soils and wastes, engineering properties of soils and geosynthetic materials and their use in typical applications. Fate and transport of contaminants. Fundamental principles and practices in groundwater remediation. Application of environmental geotechnics in the design and construction of waste containment systems. Discussion of soil remediation and emerging technologies.

Environmental Geotechnics: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 175 or consent of instructor; CIV ENG 111 and CIV ENG 173 recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Sitar

Environmental Geotechnics: Read Less [-]

## CIV ENG 177 Foundation Engineering Design 3 Units

Terms offered: Spring 2017, Spring 2016, Fall 2014

Principles of foundation engineering. Shear strength of soil and theories related to the analysis and design of shallow and deep foundations, and retaining structures. Structural design of foundation elements; piles, pile caps, and retaining structures. The course has a group project that incorporates both geotechnical and structural components of different foundation elements.

Foundation Engineering Design: Read More [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 175; CIV ENG 120 recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Bray

Foundation Engineering Design: Read Less [-]

## CIV ENG C178 Applied Geophysics 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018, Fall 2017

The theory and practice of geophysical methods for determining the subsurface distribution of physical rock and soil properties. Measurements of gravity and magnetic fields, electrical and electromagnetic fields, and seismic velocity are interpreted to map the subsurface distribution of density, magnetic susceptibility, electrical conductivity, and mechanical properties.

Applied Geophysics: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Rector

**Also listed as:** EPS C178

Applied Geophysics: Read Less [-]



## CIV ENG 179 Geosystems Engineering Design 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Geosystem engineering design principles and concepts. Fundamental aspects of the geomechanical and geoenvironmental responses of soil are applied to analyze and design civil systems, such as earth dams and levees, earth retention systems, building and bridge foundations, solid-waste fills, and tailings dams. Students form teams to design geotechnical aspects of a civil project and prepare/present a design document. Field trip to a project site.

Geosystems Engineering Design: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 175

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Bray, Sitar, Soga

Geosystems Engineering Design: [Read Less](#) [-]

## CIV ENG 180 Life-Cycle Design and Construction 4 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

Course encompasses two design aspects of a civil and environmental engineering system: 1) Design of whole system, component, or life-cycle phase, subject to engineering standards and constraints, and 2) production system design (e.g., cost estimation and control, scheduling, commercial and legal terms, site layout design). Students form teams to address real-life projects and prepare project documentation and a final presentation.

Life-Cycle Design and Construction: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 167

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Instructor:** Horvath

Life-Cycle Design and Construction: [Read Less](#) [-]

## CIV ENG 186 Design of Internet-of-Things for Smart Cities 3 Units

Terms offered: Fall 2019, Fall 2018, Fall 2017

Hands-on engineering design experience for creating cyber-physical systems, or more colloquially, "internet-of-things (IoT) systems" for smart cities. Projects overlay a software layer onto physical infrastructure to produce one integrated system. Student teams will identify a challenge with current urban systems, e.g. mobility, energy & environment, water, waste, health, security, and the built environment. Student teams design and prototype an innovation that addresses this challenge using maker resources, e.g. 3D printing, laser cutters, and open-source electronics. The project will be executing via the "Design Sprint" process, which is popular in agile development and Silicon Valley. Students present projects to industry judges.

Design of Internet-of-Things for Smart Cities: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** CIV ENG 191

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 2 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternate method of final assessment during regularly scheduled final exam group (e.g., presentation, final project, etc.).

**Instructors:** Moura, Sengupta

Design of Internet-of-Things for Smart Cities: [Read Less](#) [-]

## CIV ENG 190 Special Topics in Civil and Environmental Engineering 1 - 4 Units

Terms offered: Fall 2020, Spring 2016

This course covers current topics of interest in civil and environmental engineering. The course content may vary from semester to semester depending upon the instructor

Special Topics in Civil and Environmental Engineering: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructor:** Variano

Special Topics in Civil and Environmental Engineering: [Read Less](#) [-]

## CIV ENG 191 Civil and Environmental Engineering Systems Analysis 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

This course is organized around five real-world large-scale CEE systems problems. The problems provide the motivation for the study of quantitative tools that are used for planning or managing these systems. The problems include design of a public transportation system for an urban area, resource allocation for the maintenance of a water supply system, development of repair and replacement policies for reinforced concrete bridge decks, traffic signal control for an arterial street, scheduling in a large-scale construction project.

Civil and Environmental Engineering Systems Analysis: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** CIV ENG 93 and ENGIN 7

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 3 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Bayen, Madanat, Sengupta

**Formerly known as:** 152

Civil and Environmental Engineering Systems Analysis: Read Less [\[-\]](#)

## CIV ENG 192 The Art and Science of Civil and Environmental Engineering Practice 1 Unit

Terms offered: Fall 2017, Fall 2016, Fall 2015

A series of lectures by distinguished professionals designed to provide an appreciation of the role of science, technology, and the needs of society in conceiving projects, balancing the interplay of conflicting demands, and utilizing a variety of disciplines to produce unified and efficient systems.

The Art and Science of Civil and Environmental Engineering Practice: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Senior standing in Civil Engineering

### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

The Art and Science of Civil and Environmental Engineering Practice: Read Less [\[-\]](#)

## CIV ENG 193 Engineering Risk Analysis 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Applications of probability theory and statistics in planning, analysis, and design of civil engineering systems. Development of probabilistic models for risk and reliability evaluation. Occurrence models; extreme value distributions. Analysis of uncertainties. Introduction to Bayesian statistical decision theory and its application in engineering decision-making.

Engineering Risk Analysis: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Upper division standing

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Li

Engineering Risk Analysis: Read Less [\[-\]](#)

## CIV ENG H194 Honors Undergraduate Research 3 - 4 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Supervised research. Students who have completed 3 or more upper division courses may pursue original research under the direction of one of the members of the staff. A final report or presentation is required. A maximum of 4 units of H194 may be used to fulfill the technical elective requirement.

Honors Undergraduate Research: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Upper division technical GPA 3.3, consent of instructor and faculty advisor

**Repeat rules:** Course may be repeated for credit up to a total of 8 units.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3-4 hours of independent study per week

### Summer:

6 weeks - 7.5-10 hours of independent study per week

8 weeks - 6-7.5 hours of independent study per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Honors Undergraduate Research: Read Less [\[-\]](#)

## CIV ENG 197 Field Studies in Civil Engineering 1 - 4 Units

Terms offered: Fall 2020, Summer 2020 10 Week Session, Spring 2020  
Supervised experience in off-campus companies or tutoring/mentoring relevant to specific aspects and applications of civil engineering on or off campus. Written report required at the end of the semester.

Field Studies in Civil Engineering: Read More [\[+\]](#)

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of fieldwork per week

### Summer:

6 weeks - 2.5-10 hours of fieldwork per week

8 weeks - 1.5-7.5 hours of fieldwork per week

10 weeks - 1.5-6 hours of fieldwork per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Field Studies in Civil Engineering: Read Less [\[-\]](#)

## CIV ENG 198 Directed Group Study for Advanced Undergraduates 1 - 4 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Group study of a selected topic or topics in civil engineering.

Directed Group Study for Advanced Undergraduates: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Senior standing in engineering

**Credit Restrictions:** Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of directed group study per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Directed Group Study for Advanced Undergraduates: Read Less [\[-\]](#)

## CIV ENG 199 Supervised Independent Study 1 - 4 Units

Terms offered: Fall 2020, Summer 2020 3 Week Session, Spring 2020  
Supervised independent study.

Supervised Independent Study: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Consent of instructor and major adviser. Enrollment is restricted; see the Course Number Guide for details

**Credit Restrictions:** Course may be repeated for a maximum of four units per semester.

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of independent study per week

### Summer:

6 weeks - 1-5 hours of independent study per week

8 weeks - 1-4 hours of independent study per week

10 weeks - 1-4 hours of independent study per week

### Additional Details

**Subject/Course Level:** Civil and Environmental Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Supervised Independent Study: Read Less [\[-\]](#)

Expand all course descriptions [\[+\]](#)Collapse all course descriptions [\[-\]](#)

## UGBA C5 Introduction to Entrepreneurship 2 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018, Spring 2017

This course offers students a taste of what it's really like to start a business. In addition to learning key foundational entrepreneurial concepts such as idea generation & evaluation, customer & product development, creating a business model, fundraising, marketing, and scaling & exiting a business, students will also hear from successful entrepreneurs who share their perspectives and best practices. Students will apply core concepts by working in teams to evaluate and select a venture idea that they will then develop throughout the semester.  
Introduction to Entrepreneurship: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Also listed as:** L & S C5

Introduction to Entrepreneurship: Read Less [\[-\]](#)

## UGBA 10 Principles of Business 3 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

This team-taught course provides an introduction to the study of the modern business enterprise. It consists of four modules, the order of which may vary from semester to semester, and an online business simulation that runs during most of the semester. The four modules cover: Finance & Accounting, Marketing, Operations & Sustainability, and Leadership. In addition to lectures and the simulation, students attend discussion section each week.

Principles of Business: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Formerly known as:** Business Administration 10

Principles of Business: [Read Less](#) [-]

## UGBA C12 The Berkeley Changemaker: A Discovery Experience 2 Units

Terms offered: Not yet offered

The course is a discovery experience: Students discover their own leadership styles, and they discover how they can create teams – and act upon the world – to effect positive change. Students will learn how to imagine better futures, and then learn how to mobilize others to help create them. Changemakers make their impact through scientific breakthroughs, artistic imagination, social action projects, and entrepreneurial ventures. Online class sessions will cover both theoretical and practical topics, such as critical thinking, persuasive communication, problem framing, hypothesis testing, and leading and working with teams. The ultimate goal of the course is to help incoming students discover their own identity as Berkeley Changemakers. Terms offered: Summer 2020 3 Week Session

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The Berkeley Changemaker: A Discovery Experience: [Read More](#) [+]

### Hours & Format

**Summer:** 3 weeks - 10 hours of web-based lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only.  
Alternative to final exam.

**Also listed as:** L & S C12

The Berkeley Changemaker: A Discovery Experience: [Read Less](#) [-]

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Terms offered: Not yet offered

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The Berkeley Changemaker: A Discovery Experience: Read More [+]

### Hours & Format

**Summer:** 3 weeks - 10 hours of web-based lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Alternative to final exam.

**Also listed as:** L & S C12

The Berkeley Changemaker: A Discovery Experience: Read Less [-]

## UGBA 24 Freshman Seminars 1 Unit

Terms offered: Spring 2020, Fall 2013, Spring 2007

The Berkeley Seminar Program has been designed to provide new students with the opportunity to explore an intellectual topic with a faculty member in a small-seminar setting. Berkeley Seminars are offered in all campus departments, and topics vary from department to department and semester to semester.

Freshman Seminars: Read More [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of seminar per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** The grading option will be decided by the instructor when the class is offered. Final exam required.

Freshman Seminars: Read Less [-]

## UGBA 39AC Philanthropy: A Cross-Cultural Perspective 3 Units

Terms offered: Fall 2019, Fall 2018, Fall 2017

This class will compare and contrast the variety of gift giving and sharing traditions that make up American philanthropy. Both the cultural antecedents and their expression in this country will be explored from five ethnic and racial groups: Native American, European American, African American, Hispanic American, and Asian American. The goal is to gain a greater understanding of the many dimensions of philanthropy as it is practiced in the United States today.

Philanthropy: A Cross-Cultural Perspective: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 39AC

Philanthropy: A Cross-Cultural Perspective: Read Less [-]



## UGBA 39E Freshman/Sophomore Seminar 2 - 4 Units

Terms offered: Fall 2020, Fall 2019, Spring 2018

Freshman and sophomore seminars offer lower division students the opportunity to explore an intellectual topic with a faculty member and a group of peers in a small-seminar setting. These seminars are offered in all campus departments; topics vary from department to department and from semester to semester.

Freshman/Sophomore Seminar: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** Priority given to freshmen and sophomores

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2-4 hours of seminar per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** The grading option will be decided by the instructor when the class is offered. Final exam required.

**Formerly known as:** Business Administration 39

Freshman/Sophomore Seminar: [Read Less](#) [-]

## UGBA 88 Data and Decisions 2 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

The goal of this connector course is to provide an understanding of how data and statistical analysis can improve managerial decision-making. We will explore statistical methods for gleanings insights from economic and social data, with an emphasis on approaches to identifying causal relationships. We will discuss how to design and analyze randomized experiments and introduce econometric methods for estimating causal effects in non-experimental data. The course draws on a variety of business and social science applications, including advertising, management, online marketplaces, labor markets, and education. This course, in combination with the Data 8 Foundations course, satisfies the statistics prerequisite for admission to Haas.

Data and Decisions: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** One semester of Calculus (Math 16A or Math 1A).

Also, this is a Data Science connector course and may only be taken concurrently with or after completing Computer Science C8/Statistics C8/Information C8

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Miller

Data and Decisions: [Read Less](#) [-]

## UGBA C95B Introduction to the Biotechnology Field and Industry: Impact, History, Therapeutics R&D, Entrepreneurship and Careers 2 Units

Terms offered: Spring 2019

This course offers an introduction to the field of biotechnology and will cover the history of the field, its impact on medicine and society, key methodologies, important therapeutic areas, and the range of career options available in the biopharmaceutical industry. In addition to lectures on innovation and entrepreneurship, students will hear from lecturers with expertise ranging from molecular biology to clinical trial design and interpretation. Several case studies of historically impactful scientists, entrepreneurs, and biotherapeutic companies will be presented. Students will work in teams to create and develop novel biotechnology company ideas to present in class. Intended for students interested in the Biology +Business program.

Introduction to the Biotechnology Field and Industry: Impact, History, Therapeutics R&D, Entrepreneurship and Careers: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only.  
Alternative to final exam.

**Instructors:** Kirn, Lasky

**Also listed as:** MCELLBI C95B

Introduction to the Biotechnology Field and Industry: Impact, History, Therapeutics R&D, Entrepreneurship and Careers: Read Less [-]

## UGBA 96 Lower Division Special Topics in Business Administration 1 - 4 Units

Terms offered: Fall 2020, Fall 2019, Spring 2019

Study in various fields of business administration for lower division students. Topics will vary from year to year and will be announced at the beginning of each semester.

Lower Division Special Topics in Business Administration: Read More [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Lower Division Special Topics in Business Administration: Read Less [-]

## UGBA 98 Directed Group Study 1 - 4 Units

Terms offered: Spring 2015, Fall 2014, Spring 2014

Organized group study on topics selected by lower division students under the sponsorship and direction of a member of the Haas School of Business faculty.

Directed Group Study: Read More [+]

### Rules & Requirements

**Credit Restrictions:** Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of directed group study per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

**Formerly known as:** Business Administration 98

Directed Group Study: Read Less [-]

## UGBA 100 Business Communication 2 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Theory and practice of effective communication in a business environment. Students practice what they learn with oral presentations and written assignments that model real-life business situations.

Business Communication: Read More [+]

### Rules & Requirements

**Prerequisites:** Restricted to Undergraduate Business Administration  
Majors Only

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Summer:

6 weeks - 5 hours of lecture per week

8 weeks - 4 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Business Communication: Read Less [-]

## UGBA 101A Microeconomic Analysis for Business Decisions 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

Economic analysis applicable to the problems of business enterprises with emphasis on the determination of the level of prices, outputs, and inputs; effects of the state of the competitive environment on business and government policies.

Microeconomic Analysis for Business Decisions: Read More [+]

### Rules & Requirements

**Prerequisites:** Economics 1, Mathematics 1A or 16A, Statistics W21, or equivalents

**Credit Restrictions:** Students will receive no credit for UGBA 101A after completing ECON 100A, ECON 101A, BUS ADM 110, ENVECON 100, BUS ADM S110, IAS 106, or POLECON 106. A deficient grade in UGBA 101A may be removed by taking POLECON 106, ECON 100A, ECON 101A, ENVECON 100, IAS 106, or POLECON 106.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Microeconomic Analysis for Business Decisions: Read Less [-]

## UGBA 101B Macroeconomic Analysis for Business Decisions 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Summer 2020 Second 6 Week Session

Analysis of the operation of the market system with emphasis on the factors responsible for economic instability; analysis of public and business policies which are necessary as a result of business fluctuations.

Macroeconomic Analysis for Business Decisions: Read More [+]

### Rules & Requirements

**Prerequisites:** Economics 1, Mathematics 1A or 16A, Statistics W21, or equivalents

**Credit Restrictions:** Students will receive no credit for UGBA 101B after completing ECON 100B, ECON 101B, BUS ADM 111, IAS 107, or POLECON 107. A deficient grade in UGBA 101B may be removed by taking ECON 100B, ECON 101B, IAS 107, or POLECON 107.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Formerly known as:** Business Administration 111

Macroeconomic Analysis for Business Decisions: Read Less [-]

## UGBA 102A Financial Accounting 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

The identification, measurement, and reporting of financial effects of events on enterprises, with a particular emphasis on business organization. Preparation and interpretation of balance sheets, income statements, and statements of cash flows.

Financial Accounting: Read More [+]

### Rules & Requirements

**Credit Restrictions:** Course not open for credit for students who are taking or have completed Undergraduate Business Administration W102A.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Financial Accounting: Read Less [-]

## UGBA 102B Managerial Accounting 3 Units

Terms offered: Fall 2020, Summer 2020 Second 6 Week Session, Spring 2020

The uses of accounting systems and their outputs in the process of management of an enterprise. Classification of costs and revenue on several bases for various uses; budgeting and standard cost accounting; analyses of relevant costs and other data for decision making.

Managerial Accounting: Read More [+]

### Rules & Requirements

**Prerequisites:** 102A

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Managerial Accounting: Read Less [-]

## UGBA W102A Financial Accounting 3 Units

Terms offered: Summer 2020 First 6 Week Session, Summer 2019 First 6 Week Session, Summer 2018 First 6 Week Session

The identification, measurement, and reporting of financial effects of events on enterprises, with a particular emphasis on business organization. Preparation and interpretation of balance sheets, income statements, and statements of cash flows.

Financial Accounting: Read More [+]

### Rules & Requirements

**Credit Restrictions:** Course not open for credit for students who are taking or have completed Undergraduate Business Administration 102A.

### Hours & Format

**Summer:** 6 weeks - 7.5 hours of web-based lecture per week

**Online:** This is an online course.

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Financial Accounting: Read Less [-]

## UGBA 103 Introduction to Finance 4 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Summer 2020 Second 6 Week Session

Analysis and management of the flow of funds through an enterprise. Cash management, source and application of funds, term loans, types and sources of long-term capital. Capital budgeting, cost of capital, and financial structure. Introduction to capital markets.

Introduction to Finance: Read More [+]

### Rules & Requirements

**Prerequisites:** 101A

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:**  
6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week  
8 weeks - 6 hours of lecture and 2 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Introduction to Finance: Read Less [-]

## UGBA 104 Introduction to Business Analytics 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

This course provides an introduction to several quantitative methods used to facilitate complex decision-making in business, with applications in many different industries, at different levels in the organization, and with different scopes of decisions. The power of the methods covered in this class is further enhanced by implementing them in spreadsheet software, which allows complex problems to be approached and solved in a straightforward and understandable manner.

Introduction to Business Analytics: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Mathematics 1B or 16B, Statistics W21, or equivalents

### Hours & Format

**Fall and/or spring:** 15 weeks - 1.5 hours of lecture and 1.5 hours of laboratory per week

**Summer:** 6 weeks - 2.5 hours of lecture and 2.5 hours of laboratory per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Introduction to Business Analytics: Read Less [\[-\]](#)

## UGBA 105 Leading People 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

A general descriptive and analytical study of organizations from the behavioral science point of view. Problems of motivation, leadership, morale, social structure, groups, communications, hierarchy, and control in complex organizations are addressed. The interaction among technology, environment, and human behavior are considered. Alternate theoretical models are discussed.

Leading People: Read More [\[+\]](#)

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for Undergrad. Business Administration 105 after completing Business Administration 150 or S150.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1.5-3 hours of lecture and 1.5-0 hours of discussion per week

### Summer:

6 weeks - 4-8 hours of lecture and 4-0 hours of discussion per week

8 weeks - 3-6 hours of lecture and 3-0 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Leading People: Read Less [\[-\]](#)

## UGBA 106 Marketing 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Summer 2020 Second 6 Week Session

The evolution of markets and marketing; market structure; marketing cost and efficiency; public and private regulation; the development of marketing programs including decisions involving products, price, promotional distribution.

Marketing: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Summer:

6 weeks - 7.5 hours of lecture per week

8 weeks - 6 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Marketing: Read Less [\[-\]](#)

## UGBA 107 The Social, Political, and Ethical Environment of Business 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

Study and analysis of American business in a changing social and political environment. Interaction between business and other institutions. Role of business in the development of social values, goals, and national priorities. The expanding role of the corporation in dealing with social problems and issues.

The Social, Political, and Ethical Environment of Business: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 5-7.5 hours of lecture and 2.5-0 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

The Social, Political, and Ethical Environment of Business: Read Less [-]

## UGBA 115 Competitive Strategy 3 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

This course draws upon theories and frameworks from industrial organization economics, game theory, and resource-based views to address the unique challenges confronted by senior executives of organizations. The focus is strategies for competitive advantage at an organizational level. Topics include industry and competitor analysis, horizontal and vertical boundaries of the firm, strategic positioning, internal competencies, and dynamic capabilities.

Competitive Strategy: Read More [+]

### Rules & Requirements

**Prerequisites:** 101A or equivalent

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Summer:

3 weeks - 15 hours of lecture per week

6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Competitive Strategy: Read Less [-]

## UGBA 117 Special Topics in Economic Analysis and Policy 1 - 4 Units

Terms offered: Fall 2018, Spring 2018, Fall 2017

A variety of topics in economic analysis and policy with emphasis on current problems and research.

Special Topics in Economic Analysis and Policy: Read More [+]

### Rules & Requirements

**Prerequisites:** 101A-101B or equivalents

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 119

Special Topics in Economic Analysis and Policy: Read Less [-]

## UGBA 118 International Trade 3 Units

Terms offered: Fall 2019, Fall 2018, Summer 2018 Second 6 Week Session

This course will develop models for understanding the economic causes and effects of international trade, will investigate the effects of economic policies that inhibit trade, and will examine the political economy of trade. By integrating the findings of the latest theoretical and empirical research in international economics, this course help students learn how to explore the current political debates in the U.S. and elsewhere regarding the benefits and costs of international trade.

International Trade: Read More [+]

### Rules & Requirements

**Prerequisites:** Undergraduate Business Administration 101A or equivalent

**Credit Restrictions:** Students will receive no credit for Undergraduate Business Administration 118 after taking Economics 181 or Economics C181/Environmental Economics and Policy C181.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

International Trade: Read Less [-]



## UGBA 119 Leading Strategy Implementation 3 Units

Terms offered: Fall 2020, Spring 2019, Spring 2018

Class format consists of lectures, experiential exercises, student presentations, and case discussions. This course will cover the concepts and techniques required for successful implementation of business strategies with a particular focus on the role of effective leadership in leading strategic change.

Leading Strategy Implementation: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 10 weeks - 4.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Formerly known as:** Business Administration 190

Leading Strategy Implementation: Read Less [-]

## UGBA 120AA Intermediate Financial Accounting 1 4 Units

Terms offered: Fall 2020, Fall 2019, Summer 2019 First 6 Week Session

This Course introduces the student to concepts, theory and applications of financial accounting. The topics covered include accrual accounting concepts, financial statement analysis, inventory valuations, capital assets and their corresponding depreciation and impairment. Attention is given to examples on current reporting practices and to the study of reporting requirements promulgated by the Financial Accounting Standards Board ("FASB") with comparison to the International Accounting Standards Board ("IASB").

Intermediate Financial Accounting 1: Read More [+]

### Rules & Requirements

**Prerequisites:** 102A

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Intermediate Financial Accounting 1: Read Less [-]

## UGBA 120AB Intermediate Financial Accounting 2 4 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

This course expands students' knowledge of the concepts, theory, and application of financial accounting. It continues the technical accounting sequence, which also includes UGBA 120AA, Intermediate Accounting 1 and UGBA 120B, Advanced Financial Accounting. Topics include an in-depth treatment of the financing elements of the balance sheet and the income statement, as well as a detailed examination of the statement of cash flows.

Intermediate Financial Accounting 2: Read More [+]

### Rules & Requirements

**Prerequisites:** UGBA 102A is required. UGBA 120AA is recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Intermediate Financial Accounting 2: Read Less [-]

## UGBA 120B Advanced Financial Accounting 4 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Continuation of 120A. Sources of long term capital; funds statements, financial analysis, accounting for partnerships, consolidated financial statements, adjustments of accounting data using price indexes; accounting for the financial effects of pension plans; other advanced accounting problems.

Advanced Financial Accounting: Read More [+]

### Rules & Requirements

**Prerequisites:** UGBA 120AA and 120AB are recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Advanced Financial Accounting: Read Less [-]

## UGBA 121 Federal Income Tax Accounting 4 Units

Terms offered: Spring 2020, Fall 2019, Spring 2019

Determination of individual and corporation tax liability; influence of federal taxation on economic activity; tax considerations in business and investment decisions.

Federal Income Tax Accounting: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 102A (120AA recommended)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Federal Income Tax Accounting: Read Less [\[-\]](#)

## UGBA 122 Financial Information Analysis 4 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

This course is designed to: 1) develop basic skills in financial statement analysis; 2) teach students to identify the relevant financial data used in a variety of decision contexts, such as equity valuation, forecasting firm-level economic variables, distress prediction and credit analysis; 3) help students appreciate the factors that influence the outcome of the financial reporting process, such as the incentives of reporting parties, regulatory rules, and a firm's competitive environment.

Financial Information Analysis: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 120AA

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Financial Information Analysis: Read Less [\[-\]](#)

## UGBA 123 Operating and Financial Reporting Issues in the Financial Services Industry 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

This course examines how accounting in the financial services industry – banking, insurance, investment industry, and real estate – actually operates. Students learn about underwriting and pricing in each sector, investment processes and controls, incentive-based profit sharing, risk management, and the factors that contribute to profitability. Students learn what financial statements reveal about estimates companies make regarding liabilities and, more generally, what they reveal about how companies deal with uncertainty associated with predicting and measuring financial results. Students examine the controversy over employing Fair Value Accounting across sectors and learn about other sector-specific accounting requirements.

Operating and Financial Reporting Issues in the Financial Services Industry: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Students are encouraged to complete UGBA 102A or to possess a basic understanding about how financial statements are prepared

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Operating and Financial Reporting Issues in the Financial Services Industry: Read Less [\[-\]](#)

## UGBA 125 Ethics in Accounting 3 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

This course focuses on ethics related to the accounting for and reporting of financial statements and related financial information, and touches on the ethics of tax preparers. It is taught within the context of the American Institute of Certified Public Accountants (AICPA), as well as broader ethical concepts. This course fulfills the accounting ethics education requirement of the California Board of Accountancy, needed for a California CPA license. The course covers (i) theories and rules and (ii) the application of these theories and rules to case studies drawn from real life. Students are taught not only to identify the risks of fraud, but also how an organization's culture and structure might be altered to reduce the risks.

Ethics in Accounting: Read More [ + ]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Ethics in Accounting: Read Less [ - ]

## UGBA 126 Auditing 4 Units

Terms offered: Spring 2020, Fall 2019, Spring 2019

Concepts and problems in the field of professional verification of financial and related information, including ethical, legal and other professional issues, historical developments, and current concerns.

Auditing: Read More [ + ]

### Rules & Requirements

**Prerequisites:** 120AA (120AB and 120B recommended)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Auditing: Read Less [ - ]

## UGBA 127 Special Topics in Accounting 1 - 4 Units

Terms offered: Spring 2020, Spring 2019, Fall 2018

A variety of topics in accounting with emphasis on current problems and research.

Special Topics in Accounting: Read More [ + ]

### Rules & Requirements

**Prerequisites:** At the discretion of the instructor

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture and 0-1 hours of discussion per week

**Summer:** 6 weeks - 2.5-10 hours of lecture and 0-2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Special Topics in Accounting: Read Less [ - ]

## UGBA 128 Strategic Cost Management 3 Units

Terms offered: Spring 2020, Spring 2019, Fall 2017

Managerial accounting is a company's internal language and is used for decision-making, production management, product design and pricing, performance evaluation and motivation of employees. The objective of the course is to develop the skills and analytical ability of effectively and efficiently use managerial accounting information in order to help a company achieve its strategic and financial goals.

Strategic Cost Management: Read More [ + ]

### Rules & Requirements

**Prerequisites:** 102B

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Strategic Cost Management: Read Less [ - ]

## UGBA 131 Corporate Finance and Financial Statement Analysis 3 Units

Terms offered: Fall 2020, Summer 2020 Second 6 Week Session, Spring 2020

This course will cover the principles and practice of business finance. It will focus on project evaluation, capital structure, and corporate governance. Firms' policies toward debt, equity, and dividends are explored. The incentives and conflicts facing managers and owners are also discussed.

Corporate Finance and Financial Statement Analysis: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 103

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 134

Corporate Finance and Financial Statement Analysis: Read Less [\[-\]](#)

## UGBA 131A Corporate Strategy and Valuation 3 Units

Terms offered: Spring 2020, Spring 2019

The course is designed to cover advanced corporate finance issues. Its purpose is two-fold. First, it will help students develop a tool-box, both conceptual and quantitative, to address real-world corporate financial issues that they will likely use immediately in any finance-related career. Second, the course is designed to give the "the big picture," i.e., sharpen understanding of how corporate financial strategy helps increase a firm's value in a dynamic environment. The course examines qualitative factors that help determine financial strategy, including the costs of financial distress and the value of financial flexibility, as well as quantitative techniques, such as option pricing, that will be helpful in various analyses.

Corporate Strategy and Valuation: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Undergraduate Business Administration 103

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Corporate Strategy and Valuation: Read Less [\[-\]](#)

## UGBA 132 Financial Institutions and Markets 3 Units

Terms offered: Summer 2020 First 6 Week Session, Summer 2019 First 6 Week Session, Summer 2018 First 6 Week Session

Organization, behavior, and management of financial institutions. Markets for financial assets and the structure of yields, influence of Federal Reserve System and monetary policy on financial assets and institutions. Financial Institutions and Markets: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 101A-101B, and 103

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 8 hours of lecture and 2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 132

Financial Institutions and Markets: Read Less [\[-\]](#)

## UGBA 133 Investments 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Summer 2020 Second 6 Week Session

Sources of and demand for investment capital, operations of security markets, determination of investment policy, and procedures for analysis of securities.

Investments: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 103

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Investments: Read Less [\[-\]](#)

## UGBA 134 Introduction to Financial Engineering 3 Units

Terms offered: Spring 2019

This course provides students with an introduction to the application of mathematics and statistics in the field of finance. It consists of three integrated modules: 1) an introduction to the quantitative foundations of finance, using calculus, linear algebra, statistics and probability; 2) extension into financial theory as it relates to asset pricing, fixed income, derivatives, structured finance and risk management; and 3) application and implementation of these foundational tools and theory through software like Excel to build basic quantitative financial models (touching on programming). The goal is to use financial models that can guide business and financial decisions.

Introduction to Financial Engineering: Read More [ + ]

### Rules & Requirements

**Prerequisites:** UGBA 103

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Introduction to Financial Engineering: Read Less [ - ]

## UGBA 135 Personal Financial Management 2 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

Survey of major life financial decisions (e.g., career choice, consumption versus saving, investments, mortgages, insurance) and how decision-making biases (e.g., overconfidence, present bias, limited attention) can lead to suboptimal choice. The course draws on research from economics, psychology, and sociology.

Personal Financial Management: Read More [ + ]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Odean, Selinger

Personal Financial Management: Read Less [ - ]

## UGBA 136F Behavioral Finance 3 Units

Terms offered: Summer 2020 Second 6 Week Session, Summer 2019 Second 6 Week Session, Summer 2018 Second 6 Week Session

This course explores why markets are sometimes inefficient. We consider the role that investors' heuristics and biases play in generating mispricing in financial markets. We also explore how various trading frictions limit the ability of arbitrageurs to reduce mispricing. Finally, we look at the influence of market inefficiencies on corporate decisions.

Behavioral Finance: Read More [ + ]

### Rules & Requirements

**Prerequisites:** 103

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Behavioral Finance: Read Less [ - ]

## UGBA 137 Special Topics in Finance 1 - 4 Units

Terms offered: Fall 2020, Summer 2020 Second 6 Week Session, Spring 2020

A variety of topics in finance with emphasis on current problems and research.

Special Topics in Finance: Read More [ + ]

### Rules & Requirements

**Prerequisites:** 103

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 139

Special Topics in Finance: Read Less [ - ]

## UGBA 141 Production and Operations Management 2 - 3 Units

Terms offered: Spring 2017, Spring 2016, Spring 2015

A survey of the concepts and methodologies for management control of production and operations systems. Topics include inventory control, material requirements planning for multistage production systems, aggregate planning, scheduling, and production distribution.

Production and Operations Management: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 104 or equivalent, or consent of instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 2-3 hours of lecture and 0-1 hours of discussion per week

**Summer:** 6 weeks - 5-7.5 hours of lecture and 0-2.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 142

Production and Operations Management: Read Less [\[-\]](#)

## UGBA 143 Game Theory and Business Decisions 3 Units

Terms offered: Fall 2014, Fall 2013, Spring 2010

This course provides an introduction to game theory and decision analysis. Game theory is concerned with strategic interactions among players (multi-player games), and decision analysis is concerned with making choices under uncertainty (single-player games). Emphasis is placed on applications.

Game Theory and Business Decisions: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Mathematics 1B or 16B, Statistics 21, or equivalent

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Game Theory and Business Decisions: Read Less [\[-\]](#)

## UGBA 146 Project Management 2 Units

Terms offered: Summer 2020 First 6 Week Session, Fall 2005, Spring 2005

The primary objective of this course is to develop the critical skills and knowledge needed to successfully pitch and lead projects, and to deliver those projects on time and within budget. The course delves into formal planning and scheduling techniques including: project definition, project selection, Work Breakdown Structure (WBS), Resource Estimation, Critical Path Method (CPM), Pert, Gantt Charts, Resource Constrained Scheduling, Project Monitoring and Project Closing.

Project Management: Read More [\[+\]](#)

### Hours & Format

**Summer:** 6 weeks - 5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Project Management: Read Less [\[-\]](#)

## UGBA 147 Special Topics in Operations and Information Technology Management 1 - 4 Units

Terms offered: Summer 2020 First 6 Week Session, Spring 2020, Summer 2019 First 6 Week Session

A variety of topics in manufacturing and information technology with emphasis on current problems and research.

Special Topics in Operations and Information Technology Management: Read More [\[+\]](#)

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Special Topics in Operations and Information Technology Management: Read Less [\[-\]](#)



## UGBA 151 Management of Human Resources 3 Units

Terms offered: Spring 2020, Fall 2018, Fall 2016

The designs of systems of rewards, assessment, and manpower development. The interaction of selection, placement, training, personnel evaluation, and career ladders within an on-going organization. Role of the staff manager. Introduction of change. Implications of behavioral research for management problems and policies.

Management of Human Resources: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 105

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 151

Management of Human Resources: Read Less [\[-\]](#)

## UGBA 152 Negotiation and Conflict Resolution 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

The purpose of this course is to understand the theory and processes of negotiation as practiced in a variety of settings. It is designed to be relevant to the broad spectrum of negotiation problems faced by managers and professionals. By focusing on the behavior of individuals, groups, and organizations in the context of competitive situations, the course will allow students the opportunity to develop negotiation skills experientially in useful analytical frameworks (e.g.- simulations, cases).  
Negotiation and Conflict Resolution: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 105

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 152

Negotiation and Conflict Resolution: Read Less [\[-\]](#)

## UGBA 154 Power and Politics in Organizations 3 Units

Terms offered: Fall 2020, Summer 2020 Second 6 Week Session, Fall 2019

This course will provide students with a sense of "political intelligence." After taking this course, students will be able to: (1) diagnose the true distribution of power in organizations, (2) identify strategies for building sources of power, (3) develop techniques for influencing others, (4) understand the role of power in building cooperation and leading change in organizations, and (5) make sense of others' attempts to influence them. These skills are essential for effective and satisfying career building.

Power and Politics in Organizations: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Power and Politics in Organizations: Read Less [\[-\]](#)

## UGBA 155 Leadership 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

The purpose of this course is for the students to develop understanding of the theory and practice of leadership in various organizational settings. It is designed to allow students the opportunity to develop leadership skills through experiential exercises, behavioral and self-assessments, case studies, class discussions, and lectures.

Leadership: Read More [\[+\]](#)

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for UGBA 155 after completing UGBA W155. A deficient grade in UGBA 155 may be removed by taking UGBA W155.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Leadership: Read Less [\[-\]](#)

## UGBA C155 Leadership: Purpose, Authority, and Empowerment 3 Units

Terms offered: Summer 2020 10 Week Session

The purpose of this course is for the students to develop understanding of the theory and practice of leadership in various organizational settings. It is designed to allow students the opportunity to develop leadership skills through experiential exercises, behavioral and self-assessments, case studies, class discussions, and lectures.

Leadership: Purpose, Authority, and Empowerment: Read More [\[+\]](#)

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for UGBA C155 after completing UGBA W155. A deficient grade in UGBA C155 may be removed by taking UGBA W155.

### Hours & Format

**Summer:** 10 weeks - 4.5 hours of web-based lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Also listed as:** UGIS C151

Leadership: Purpose, Authority, and Empowerment: Read Less [\[-\]](#)

## UGBA W155 Leadership: Purpose, Authority, and Empowerment 3 Units

Terms offered: Not yet offered

The purpose of this course is for the students to develop understanding of the theory and practice of leadership in various organizational settings. It is designed to allow students the opportunity to develop leadership skills through experiential exercises, behavioral and self-assessments, case studies, class discussions, and lectures.

Leadership: Purpose, Authority, and Empowerment: Read More [\[+\]](#)

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for UGBA W155 after completing UGBA 155. A deficient grade in UGBA W155 may be removed by taking UGBA 155.

### Hours & Format

**Summer:** 10 weeks - 4.5 hours of web-based lecture per week

**Online:** This is an online course.

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructor:** Mulhern

Leadership: Purpose, Authority, and Empowerment: Read Less [\[-\]](#)

## UGBA 157 Special Topics in the Management of Organizations 1 - 4 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

A variety of topics in organizational behavior and industrial relations with emphasis on current problems and research.

Special Topics in the Management of Organizations: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 105

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 159

Special Topics in the Management of Organizations: Read Less [\[-\]](#)

## UGBA 160 Customer Insights 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

Consumer behavior is the study of how consumers process information, form attitudes and judgments, and make decisions. Its study is critical to understand how consumers think and behave, which is critical for a company wishing to develop a customer focus. Given how different people are, it is amazing how similarly their minds work. Consumer psychology is the systematic study of how consumers perceive information, how they encode it in memory, integrate it with other sources of information, retrieve it from memory, and utilize it to make decisions. It is one of the building blocks of the study of marketing and provides the student with a set of tools with diverse applications.

Customer Insights: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 106

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Customer Insights: Read Less [\[-\]](#)

## UGBA 161 Market Research: Tools and Techniques for Data Collection and Analysis 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2017

Information technology has allowed firms to gather and process large quantities of information about consumers' choices and reactions to marketing campaigns. However, few firms have the expertise to intelligently act on such information. This course addresses this shortcoming by teaching students how to use customer information to better market to consumers. In addition, the course addresses how information technology affects marketing strategy.

Market Research: Tools and Techniques for Data Collection and Analysis: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 106

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Market Research: Tools and Techniques for Data Collection and Analysis: Read Less [\[-\]](#)

## UGBA 162 Brand Management and Strategy 3 Units

Terms offered: Fall 2020, Summer 2020 First 6 Week Session, Spring 2020

This course is an introduction to product management in marketing consumer and industrial goods and services. The course will cover analysis of market information, development of product strategy, programming strategy, and implementation.

Brand Management and Strategy: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 106

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 162

Brand Management and Strategy: Read Less [\[-\]](#)

## UGBA 162A Product Branding and Branded Entertainment 2 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

As consumers demand information and products tailored specifically to their individual needs, brands strive to create alternative advertising methods to build lasting relationships and retain "top of mind" status. Smart consumers, especially those in niche markets, have dismissed traditional avenues of sponsorship and product placement. Course explores how and why brand executives across multiple industries are leveraging entertainment to connect with niche markets. It educates students about how marketers develop creative and entertaining ways to connect with multi-hyphenate customers. Course culminates in a Creative Pitch, based on a case study, and a Client Presentation where students present marketing campaigns to industry executives.

Product Branding and Branded Entertainment: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

**Summer:** 6 weeks - 5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Product Branding and Branded Entertainment: Read Less [\[-\]](#)

## UGBA 164 Marketing Strategy 3 Units

Terms offered: Spring 2020, Fall 2019, Spring 2019

This course specifically addresses how to deal with competition. Additionally, marketing managers usually have to make decisions with incomplete or unreliable information. In "Marketing Strategy" students learn how firms develop plans that can be updated in light of changing circumstances. The course covers the following topics: Market size estimation; Competitor identification and analysis; Internal analysis; Alternative business models; Risk identification, assessment and management using scenario planning; Handling unknown futures using sensitivity analysis; Price setting dynamics; Competitive tactics. The course utilizes a combination of lectures and cases. There are group presentations (self-selected teams) and some group projects.

Marketing Strategy: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 106

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Marketing Strategy: Read Less [\[-\]](#)

## UGBA 165 Advertising Strategy 3 Units

Terms offered: Summer 2020 First 6 Week Session, Fall 2019, Summer 2019 First 6 Week Session

Basic concepts and functions of advertising in the economy; consumer motivation; problems in utilizing advertising and measuring its effectiveness.

Advertising Strategy: Read More [ + ]

### Rules & Requirements

**Prerequisites:** 106

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 165

Advertising Strategy: Read Less [ - ]

## UGBA 167 Special Topics in Marketing 1 - 4 Units

Terms offered: Spring 2020, Fall 2019, Spring 2018

A variety of topics in marketing with emphasis on current problems and research.

Special Topics in Marketing: Read More [ + ]

### Rules & Requirements

**Prerequisites:** 106

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

### Summer:

6 weeks - 2.5-10 hours of lecture per week

8 weeks - 4-6 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 169

Special Topics in Marketing: Read Less [ - ]

## UGBA 169 Pricing 3 Units

Terms offered: Fall 2019, Summer 2019 Second 6 Week Session, Fall 2018

This three-module course aims to equip students with proven concepts, techniques, and frameworks for assessing and formulating pricing strategies. The first module develops the economics and behavioral foundations of pricing. The second module discusses several innovative pricing concepts including price customization, nonlinear pricing, price matching, and product line pricing. The third module analyzes the strengths and weaknesses of several Internet-based, buyer-determined pricing models.

Pricing: Read More [ + ]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Pricing: Read Less [ - ]

## UGBA C172 History of American Business 3 Units

Terms offered: Spring 2019, Spring 2017, Spring 2016

This course will examine selected aspects of the history of American business. Included will be discussions of the evolution of the large corporation, the development of modern managerial techniques, and the changing relationship of business, government, and labor.

History of American Business: Read More [ + ]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Rosen

**Formerly known as:** American Studies C172, Business Administration C172

**Also listed as:** AMERSTD C172

History of American Business: Read Less [ - ]

## UGBA 175 Legal Aspects of Management 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

An analysis of the law and the legal process, emphasizing the nature and functions of law within the U.S. federal system, followed by a discussion of the legal problems pertaining to contracts and related topics, business association, and the impact of law on economic enterprise.

Legal Aspects of Management: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 175

Legal Aspects of Management: Read Less [\[-\]](#)

## UGBA 176 Innovations in Communications and Public Relations 2 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

This course introduces students to public relations and how it is used by companies, non-profits and individuals to build and support their brands through innovative communication techniques. Students will hear from and have direct access to entrepreneurs and established executives who share insights on how they've used creative public relations campaigns and communications skills to create attention and value for their brand or avoid it in a crisis. They also learn to work in teams crafting effective media responses for an existing company needing real help now (not a case study). The semester ends with each student applying this technique to create their own personal brand that they can refine as they prepare to move into the workforce.

Innovations in Communications and Public Relations: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

**Summer:** 6 weeks - 5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Innovations in Communications and Public Relations: Read Less [\[-\]](#)

## UGBA 177 Special Topics in Business and Public Policy 1 - 4 Units

Terms offered: Fall 2020, Spring 2016, Fall 2015

A variety of topics in business and public policy with emphasis on current problems and research.

Special Topics in Business and Public Policy: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 107

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 179

Special Topics in Business and Public Policy: Read Less [\[-\]](#)

## UGBA 178 Introduction to International Business 3 Units

Terms offered: Fall 2020, Summer 2020 Second 6 Week Session, Spring 2020

A survey involving environmental, economic, political, and social constraints on doing business abroad; effects of overseas business investments on domestic and foreign economies; foreign market analysis and operational strategy of a firm; management problems and development potential of international operations.

Introduction to International Business: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Undergraduate Business Administration 101A-101B or equivalents

**Credit Restrictions:** Students will receive no credit for Undergraduate Business Administration 178 after completing Business Administration 188. A deficient grade in Business Administration 188 may be removed by taking Undergraduate Business Administration 178.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Introduction to International Business: Read Less [\[-\]](#)

## UGBA 179 International Consulting for Small and Medium-Sized Enterprises 3 Units

Terms offered: Fall 2020, Spring 2020, Fall 2019

By exploring the intersection of global business, entrepreneurship, and consulting, this course provides an understanding of how decision-makers in small and medium sized enterprises (SMEs) can develop the frameworks necessary for making decisions about how to venture across borders in pursuit of economic opportunities in today's hypercompetitive global business environment. In addition to the technical analysis of cases, there is a strong emphasis on how to create a new service company, market and sell to potential clients, manage client relationships, and leverage financial and human resources in a service setting. International Consulting for Small and Medium-Sized Enterprises: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

International Consulting for Small and Medium-Sized Enterprises: Read Less [-]

## UGBA 180 Introduction to Real Estate and Urban Land Economics 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

The nature of real property; market analysis; construction cycles; mortgage lending; equity investment; metropolitan growth; urban land use; real property valuation; public policies.

Introduction to Real Estate and Urban Land Economics: Read More [+]

### Rules & Requirements

**Prerequisites:** Economics 1, Mathematics 16A or 1A, or equivalents

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 180

Introduction to Real Estate and Urban Land Economics: Read Less [-]

## UGBA 183 Introduction to Real Estate Finance 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

Real estate debt and equity financing; mortgage market structure; effects of credit on demand; equity investment criteria; public policies in real estate finance and urban development.

Introduction to Real Estate Finance: Read More [+]

### Rules & Requirements

**Prerequisites:** 180

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 183

Introduction to Real Estate Finance: Read Less [-]

## UGBA 184 Urban and Real Estate Economics 3 Units

Terms offered: Spring 2016, Spring 2015, Spring 2014

This course examines how market forces influence the development of cities and the development and pricing of real estate assets. Topics include city formation; city size; land rent and land use; the operation of residential, commercial and industrial property markets; and the impacts of government policies, including the provision of public services, the imposition property taxes and fees, transportation pricing and investment, and land use regulations.

Urban and Real Estate Economics: Read More [+]

### Rules & Requirements

**Prerequisites:** A background in microeconomics and basic calculus is preferable. Please contact the instructor if you are unsure about your preparation for this course

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Urban and Real Estate Economics: Read Less [-]



## UGBA 187 Special Topics in Real Estate Economics and Finance 1 - 4 Units

Terms offered: Fall 2010, Fall 2009

A variety of topics in real estate economics and finance with emphasis on current problems and research.

Special Topics in Real Estate Economics and Finance: Read More [\[+\]](#)

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Special Topics in Real Estate Economics and Finance: Read Less [\[-\]](#)

## UGBA 190C Collaborative Innovation 4 Units

Terms offered: Spring 2020

This is a project-based course in collaborative innovation where students experience group creativity and team-based design by using techniques from across the disciplines of business, theater, design, and art practice. Students will leverage problem framing and solving techniques derived from critical thinking, systems thinking, and creative problem solving (popularly known today as design thinking). The course is grounded in a brief weekly lecture that sets out the theoretical, historical, and cultural contexts for particular innovation practices, but the majority of the class involves hands-on studio-based learning guided by an interdisciplinary team of teachers leading small group collaborative projects.

Collaborative Innovation: Read More [\[+\]](#)

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for UGBA 190C after completing ART 100, or THEATER 100. A deficient grade in UGBA 190C may be removed by taking ART 100, or THEATER 100.

### Hours & Format

**Fall and/or spring:** 15 weeks - 6 hours of studio per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

**Instructor:** Beckman

Collaborative Innovation: Read Less [\[-\]](#)

## UGBA 190D Innovation and Design Thinking in Business 2 Units

Terms offered: Fall 2020, Fall 2019

The goal of this course is to equip students with innovation skills and practices. This is a learn-by-doing lab. Students learn research methods, ethnography, analysis and synthesis, reflective thinking, scenario creation, ideation processes, rapid prototyping cycles and designing experiments, iterative design and how to tell the story of "Never Before Seen" ideas. Class time is spent using hands-on innovation and human-centered design practices. Teams present work for critique and iterative development. The course features short lectures, guest talks, campus-based fieldwork, site visits, research and readings. Projects will be launched in the sessions and each team will be coached and mentored.

Innovation and Design Thinking in Business: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Innovation and Design Thinking in Business: Read Less [\[-\]](#)

## UGBA 190S Strategy for the Information Technology Firm 2 - 3 Units

Terms offered: Not yet offered

This course is a strategy and general management course for students interested in pursuing careers in the global information technology industry. Students are taught to view the IT industry through the eyes of the general manager/CEO (whether at a start-up or an industry giant). They learn how to evaluate strategic options and their consequences, how to understand the perspectives of various industry players, and how to anticipate how they are likely to behave under various circumstances. These include the changing economics of production, the role network effects and standards have on adoption of new products and services, the tradeoffs among potential pricing strategies, and the regulatory and public policy context.

Strategy for the Information Technology Firm: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 2-3 hours of lecture per week

**Summer:** 8 weeks - 4-6 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Strategy for the Information Technology Firm: Read Less [\[-\]](#)

## UGBA 190T Special Topics in Innovation and Design 1 - 4 Units

Terms offered: Spring 2020, Fall 2019, Summer 2019 First 6 Week Session

Advanced study in the fields of innovation and design that will address current and emerging issues. Topics will vary with each offering and will be announced at the beginning of each term.

Special Topics in Innovation and Design: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

### Summer:

6 weeks - 2.5-10 hours of lecture per week

8 weeks - 2-7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Special Topics in Innovation and Design: [Read Less](#) [-]

## UGBA 191C Communication for Leaders 2 Units

Terms offered: Fall 2016, Summer 2016 10 Week Session, Summer 2016 Second 6 Week Session

This course is a workshop in the fundamentals of public speaking skills in today's business environment. Each student will give speeches, coach, and debate each other, and take part in a variety of listening and other communication exercises. The course focuses on authenticity, persuasion, and advocacy.

Communication for Leaders: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of lecture and 2 hours of discussion per week

### Summer:

6 weeks - 2.5 hours of lecture and 5 hours of discussion per week

8 weeks - 1.5 hours of lecture and 3.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Communication for Leaders: [Read Less](#) [-]

## UGBA 191I Improvisational Leadership 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

This class explores the broad principles of improvisation, a performing art form that has developed pedagogical methods to enhance individual spontaneity, listening and awareness, expressive skills, risk-taking, and one's ability to make authentic social and emotional connections. The ultimate aim of the course is to help students develop an innovative and improvisational leadership mindset, sharpening in-the-moment decision making and the ability to quickly recognize and act upon opportunities when presented. In practical terms, this course strives to enhance students' business communication skills and increase both interpersonal intuition and confidence.

Improvisational Leadership: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Improvisational Leadership: [Read Less](#) [-]

## UGBA 191L Leadership Communication 1 Unit

Terms offered: Spring 2020, Fall 2019

Leadership Communication is a workshop in the fundamentals of public speaking in today's business environment. Through prepared and impromptu speeches aimed at moving others to action, peer coaching, and lectures, students will sharpen their authentic and persuasive communication skills, develop critical listening skills, improve abilities to give, receive, and apply feedback, and gain confidence as public speakers.

Leadership Communication: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 2 weeks - 8 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** The grading option will be decided by the instructor when the class is offered. Alternative to final exam.

Leadership Communication: [Read Less](#) [-]

## UGBA 191P Leadership and Personal Development 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

This course is highly interactive and challenges you to explore questions central to your own leadership journey. The ultimate aim of the class is to help you develop a lifelong leadership development practice, where continuous personal growth is valued and actively pursued.

Leadership and Personal Development: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Leadership and Personal Development: [Read Less](#) [-]

## UGBA 192A Leading Nonprofit and Social Enterprises 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

This course prepares students conceptually and practically to found, lead, and manage organizations in the nonprofit sector. The course focuses on mission and theory of change (strategy), role of the board in governance, managing and marketing to multiple constituencies, role of advocacy in meeting mission, leadership styles and managing organizational culture, resource development (philanthropy), nonprofit financial management, managing for impact, HR management (volunteering), and cross-sector alliances.

Leading Nonprofit and Social Enterprises: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** 101A or equivalent

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Formerly known as:** Business Administration 115

Leading Nonprofit and Social Enterprises: [Read Less](#) [-]

## UGBA 192AC Social Movements and Social Media 3 Units

Terms offered: Spring 2020, Spring 2019, Fall 2017

This course provides a survey of innovative social movements and their complex relationships to social media technologies. It will examine the evolution from pre-social-media to present-day mobilizing strategies and the interplay between explicitly policy- and advocacy-focused approaches and related efforts rooted in music, visual arts, popular culture and celebrities. The course will place into comparative relief the discourses of explicitly racially- or ethnically-defined movements and movements that mobilize based on other, sometimes overlapping categories of marginalization including class, immigration status, gender identity and occupational category.

Social Movements and Social Media: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Instructor:** David Harris

Social Movements and Social Media: [Read Less](#) [-]

## UGBA 192B Strategic Philanthropy 2 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

This course teaches students the concepts and practices of effective philanthropy. It offers students the experience of studying relevant theories and frameworks for assessing potential grant recipients and a real-world grant making experience in which they complete a series of nonprofit organizational assessments and then make actual grants totaling \$10,000 to a limited number of organizations. Students learn about the evolution of the philanthropic sector from traditional entities, such as private, corporate and community foundations, to an array of new funding intermediaries, technology-driven philanthropies, open source platforms, "impact" investors, and venture philanthropy partnerships.

Strategic Philanthropy: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Strategic Philanthropy: [Read Less](#) [-]

## UGBA 192E Social Entrepreneurship 2 Units

Terms offered: Fall 2019

This course is designed to provide broad exposure to the theories and activities of social entrepreneurship. The inquiry is grounded in real-world examples that illustrate the topics and stimulate thinking, discussion, and learning. Working in groups, students develop a business plan or pitch deck for a social enterprise that addresses an issue that is of interest/concern to the student team. Students with preexisting social enterprise ideas or plans that they would like to further develop and refine are welcomed and encouraged to use this class project as an opportunity to do so.

Social Entrepreneurship: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Social Entrepreneurship: Read Less [-]

## UGBA 192G Strategic Approaches for Global Social Impact 2 Units

Terms offered: Prior to 2007

The main objective of this course is to help students become effective practitioners in global development and understand career options in the global social sector. The course aims to (i) analyze the historical, sociological and statistical underpinnings of the major issues in global development (conflict, food security, human rights, poverty, health and education), (ii) understand what various organizations can contribute to each issue (government agencies, multilateral institutions, private foundations, NGOs, and private sector companies and entrepreneurs), and (iii) design and analyze approaches to addressing these issues. Strategic Approaches for Global Social Impact: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Strategic Approaches for Global Social Impact: Read Less [-]

## UGBA 192H Managing Human Rights in Business 2 Units

Terms offered: Not yet offered

This course, one of the first of its kind offered at a business school, will prepare students for the growing field of practice at the intersection of business and human rights. Students will gain an overview of the international human rights framework and global business and human rights standards and guidelines; analyze the ways in which companies can impact human rights, and to assess the degree to which companies are and should be responsible for human rights impacts; learn to manage a company's human rights impacts as corporate human rights managers, external consultants, or civil society advocates; and practice the communication skills necessary to successfully address human rights issues within a complex multinational corporation.

Managing Human Rights in Business: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Managing Human Rights in Business: Read Less [-]

## UGBA 192L Applied Impact Evaluation 2 Units

Terms offered: Prior to 2007

This course covers the methods and applications of impact evaluations, which is the science of measuring the causal impact of a program or policy on outcomes of interest. At its essence, impact evaluation is about generating evidence on which policies work, and which don't. This subject matter should appeal to three main audiences: (1) those in decision-making positions, such as policy makers and business leaders, and need to consume the information generated from impact evaluations to make informed evidence-based decisions, (2) project managers, development practitioners and business managers who commission impact evaluations and (3) researchers who actually design and implement impact evaluations.

Applied Impact Evaluation: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Applied Impact Evaluation: Read Less [-]

## UGBA 192N Topics in Social Sector Leadership 1 - 5 Units

Terms offered: Fall 2019, Spring 2019, Fall 2018

Advanced study in the field of social sector leadership that will address current and emerging issues. Topics will vary with each offering and will be announced at the beginning of each term.

Topics in Social Sector Leadership: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-5 hours of lecture per week

**Summer:** 6 weeks - 2.5-12.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Topics in Social Sector Leadership: [Read Less](#) [-]

## UGBA 192P Sustainable Business Consulting Projects 3 Units

Terms offered: Fall 2020, Fall 2018, Fall 2016

Discuss the field of strategic corporate social responsibility (CSR) through a series of lectures, guest speakers, and projects. The course will examine best practices used by companies to engage in socially responsible business practices. It will provide students with a flavor of the complex dilemmas one can face in business in trying to do both "good for society" and "well for shareholders." It looks at CSR from a corporation perspective, and how this supports core business objectives, core competencies, and bottom-line profits.

Sustainable Business Consulting Projects: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Sustainable Business Consulting Projects: [Read Less](#) [-]

## UGBA 192S Business and Sustainability 2 Units

Terms offered: Summer 2020 First 6 Week Session

This course—a mixture of lectures, readings, business cases and corporate speakers—uses theory, frameworks, tools and business cases to teach students how to systematically evaluate and implement sustainability strategies that also maintain or maximize financial returns. Students are taught to identify opportunities to create business value from environmental and social challenges, and to evaluate the competitive implications related to sustainability initiatives. What type of long-term strategies can organizations set to simultaneously foster sustainable development strategy and sound financial practice? How should decision makers make trade-offs between these two organizational objectives? When is "sustainability" also "good business"? Business and Sustainability: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

**Summer:** 6 weeks - 5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Business and Sustainability: [Read Less](#) [-]

## UGBA 192T Topics in Corporate Social Responsibility 1 - 4 Units

Terms offered: Fall 2020, Summer 2020 8 Week Session, Spring 2020

Advanced study in the field of corporate social responsibility that will address current and emerging issues. Topics will vary with each offering and will be announced at the beginning of each term.

Topics in Corporate Social Responsibility: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

**Summer:** 6 weeks - 2.5-10 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Topics in Corporate Social Responsibility: [Read Less](#) [-]



## UGBA 193B Energy & Civilization 4 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Energy is one of the main drivers of civilization. Today we are at the precipice of what many hope will be a major paradigm shift in energy production and use. Two transitions are needed. On the one hand, we must find ways to extend the benefits of our existing energy system to the impoverished people living in the developing world while continuing to provide these benefits to the people of the developed world. On the other hand, we must completely overhaul the existing system to fight climate change and other forms of air and water pollution. Are these shifts truly within our reach? Can we achieve both simultaneously? If so, how? This Big Ideas course will grapple with these questions using an interdisciplinary systems approach.

Energy & Civilization: Read More [+]

### Rules & Requirements

**Credit Restrictions:** Students who take UGBA 193B will not receive credit for L&S 126.

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Energy & Civilization: Read Less [-]

## UGBA 193C Curricular Practical Training for International Students 0.0 Units

Terms offered: Summer 2014 10 Week Session, Summer 2013 10 Week Session, Summer 2012 10 Week Session

This is a zero-unit internship course for non-immigrant international students participating in internships under the Curricular Practical Training program. Requires a paper exploring how the theoretical constructs learned in UGBA courses were applied during the internship. Curricular Practical Training for International Students: Read More [+]

### Rules & Requirements

**Prerequisites:** International students only

### Hours & Format

**Fall and/or spring:** 15 weeks - 0 hours of internship per week

**Summer:** 6 weeks - 0 hours of internship per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam required.

Curricular Practical Training for International Students: Read Less [-]

## UGBA 193I Business Abroad 4 - 6 Units

Terms offered: Summer 2019 8 Week Session, Summer 2018 Second 6 Week Session, Summer 2017 Second 6 Week Session

This course includes both formal learning in lectures, experiential learning, and action research through site visits abroad. Students and instructor will visit with international companies and/or organizations to learn about the business opportunities and challenges of operating in a specific country or region. Evaluation is based on student participation, presentations, and a research paper. Country and business industry focus may vary from term to term depending upon the instructor.

Business Abroad: Read More [+]

### Rules & Requirements

**Prerequisites:** To be determined by instructor depending on topic

**Repeat rules:** Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 4-6 hours of lecture per week

**Summer:** 5 weeks - 16-25 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Business Abroad: Read Less [-]

## UGBA 194 Undergraduate Colloquium on Business Topics 1 Unit

Terms offered: Spring 2020, Spring 2019, Spring 2018

This is a speakers series course designed to give students insights from practitioners into complex issues facing American business leaders. Each week a guest speaker will discuss an issue related to a particular theme, ranging from corporate governance to the social responsibilities of business. Students will be challenged to synthesize, question, and extend those insights under the guidance of the instructor.

Undergraduate Colloquium on Business Topics: Read More [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of lecture per week

**Summer:** 6 weeks - 2.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam required.

Undergraduate Colloquium on Business Topics: Read Less [-]



## UGBA 195A Entrepreneurship 3 Units

Terms offered: Spring 2020, Fall 2019, Spring 2019

Do you have an idea for a new business, but want to learn how to more fully develop this idea? Would you like to receive funding for your business idea, but lack a framework to ask for capital? This course takes students through the new venture process using a business plan as the main deliverable. A well-written business plan sets key milestones and indicates the resources needed to achieve them, in an increasingly complex business environment. Through the planning process that tightly links market and financial planning a business plan creates a set of standards to which investors and teammates can evaluate actual performance, laying the foundation for an "operating plan" once the business is launched.

Entrepreneurship: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Entrepreneurship: Read Less [\[-\]](#)

## UGBA 195B Startup and Small-Business Consulting 2 Units

Terms offered: Not yet offered

This course is designed to provide students with an understanding of the concepts and principles for consulting with startups and small businesses. Students will work in self-created teams of 3-4 and can either bid for projects provided by the instructor, or source their own project so long as it fits the course criteria. Course time will include guest lecturers and consulting skills workshops. Student teams will be expected to meet together and with the client outside of class time.

Startup and Small-Business Consulting: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Startup and Small-Business Consulting: Read Less [\[-\]](#)

## UGBA 195P Entrepreneurship: How to Successfully start a New Business 3 Units

Terms offered: Fall 2019, Fall 2018, Fall 2017

This course explores and examines key issues facing entrepreneurs and their businesses. It is intended to provide a broad spectrum of topics across many business disciplines including accounting, finance, marketing, organizational behavior, production/quality, technology, etc. Students will acquire a keen understanding of both the theoretical and real world tools used by today's entrepreneurial business leaders in achieving success in today's global business environment.

Entrepreneurship: How to Successfully start a New Business: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Entrepreneurship: How to Successfully start a New Business: Read Less [\[-\]](#)

## UGBA 195S Entrepreneurship To Address Global Poverty 3 Units

Terms offered: Spring 2013, Spring 2012, Spring 2011

This course examines whether and how entrepreneurial ventures can meaningfully address global poverty vs. more traditional approaches such as foreign aid, private philanthropy or corporate social responsibility initiatives. Combining lectures, case studies, and interviews with social entrepreneurs, it explores poverty and entrepreneurship before focusing on their intersection in various bottom-of-pyramid markets, from health, housing, and education to energy, agriculture, and finance.

Entrepreneurship To Address Global Poverty: Read More [\[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/  
Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Entrepreneurship To Address Global Poverty: Read Less [\[-\]](#)

## UGBA 195T Topics in Entrepreneurship 1 - 3 Units

Terms offered: Spring 2020, Fall 2019, Spring 2019

Courses of this kind will cover issues in entrepreneurship that either appeal to a specialized interest by type of firm being started (e.g., new ventures in computer software) or in the aspect of the entrepreneurial process being considered (e.g., new venture funding). The courses typically will be designed to take advantage of the access offered by the University and the locale to knowledgeable and experienced members of the business community.

Topics in Entrepreneurship: Read More [ + ]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-3 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Topics in Entrepreneurship: Read Less [ - ]

## UGBA 196 Special Topics in Business Administration 1 - 4 Units

Terms offered: Spring 2020, Fall 2019, Spring 2019

Study in various fields of business administration. Topics will vary from year to year and will be announced at the beginning of each semester.

Special Topics in Business Administration: Read More [ + ]

### Rules & Requirements

**Prerequisites:** Upper division standing

**Repeat rules:** Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of lecture per week

### Summer:

6 weeks - 2.5-10 hours of lecture per week

10 weeks - 2-4 hours of lecture per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Formerly known as:** Business Administration 196

Special Topics in Business Administration: Read Less [ - ]

## UGBA 198 Directed Study 1 - 4 Units

Terms offered: Spring 2016, Fall 2015, Spring 2015

Organized group study on topics selected by upper division students under the sponsorship and direction of a member of the Haas School of Business faculty.

Directed Study: Read More [ + ]

### Rules & Requirements

**Prerequisites:** Consent of instructor

**Credit Restrictions:** Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of directed group study per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

**Formerly known as:** Business Administration 198

Directed Study: Read Less [ - ]

## UGBA 199 Supervised Independent Study and Research 1 - 4 Units

Terms offered: Spring 2015, Spring 2014, Fall 2013

Enrollment restrictions apply.

Supervised Independent Study and Research: Read More [ + ]

### Rules & Requirements

**Prerequisites:** Consent of instructor

**Credit Restrictions:** Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

**Fall and/or spring:** 15 weeks - 0 hours of independent study per week

### Summer:

6 weeks - 1-4 hours of independent study per week

8 weeks - 1-4 hours of independent study per week

### Additional Details

**Subject/Course Level:** Undergrad. Business Administration/ Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

**Formerly known as:** Business Administration 199

Supervised Independent Study and Research: Read Less [ - ]