

# Materials Science & Engineering and Business Administration

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

The Materials Science & 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 open to freshmen during the UC application period (November 1 - 30). Freshman admission is limited to a maximum of 50 students. Current UC Berkeley sophomores in the College of Engineering majoring in one of the M.E.T. tracks may apply to M.E.T. via the Continuing Student Admissions process.

For further information, please visit the M.E.T. website (<https://met.berkeley.edu>).

## Accreditation

The MSE undergraduate degree program in the College of Engineering is accredited by 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 <link to College Requirements page> 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/search/?P=UGBA%20194>), UGBA 198 (<http://guide.berkeley.edu/search/?P=UGBA%20198>) and UGBA 199 (<http://guide.berkeley.edu/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 Reading & Composition Parts A & B) by the spring semester of their sophomore (2nd) year.
8. Two M.E.T. Special Topics courses are required. M.E.T. Special Topics courses will count as upper division business units.
9. 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 (p. 3).

## 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
PHYSICS 89	Introduction to Mathematical Physics	4
CHEM 1A & 1AL	General Chemistry and General Chemistry Laboratory <sup>1</sup>	5
or CHEM 4A	General Chemistry and Quantitative Analysis	
CHEM 1B	General Chemistry <sup>1</sup>	4-5
or CHEM 4B	General Chemistry and Quantitative Analysis	
PHYSICS 7A	Physics for Scientists and Engineers	4
PHYSICS 7B	Physics for Scientists and Engineers	4
PHYSICS 7C	Physics for Scientists and Engineers	4
ENGIN 7	Introduction to Computer Programming for Scientists and Engineers	4
ENGIN 40	Engineering Thermodynamics	4
MAT SCI 45	Properties of Materials	3
MAT SCI 45L	Properties of Materials Laboratory	1
MEC ENG C85/ CIV ENG C30	Introduction to Solid Mechanics	3

<sup>1</sup> CHEM 4A and CHEM 4B are intended for students majoring in chemistry or a closely-related field.

## Upper Division Requirements

### Materials Science and Engineering

<b>Math/Stat/Data Elective <sup>1</sup></b>		<b>3-4</b>
MAT SCI 102	Bonding, Crystallography, and Crystal Defects	3
MAT SCI 103	Phase Transformations and Kinetics	3
MAT SCI 104	Materials Characterization	3
MAT SCI 104L	Materials Characterization Laboratory	1
MAT SCI 111	Properties of Electronic Materials	4
MAT SCI 112	Corrosion (Chemical Properties)	3
MAT SCI 113	Mechanical Behavior of Engineering Materials	3

MAT SCI 130	Experimental Materials Science and Design	3
MAT SCI 151	Polymeric Materials	3
MAT SCI 120 series course		3-4
<b>Upper Division Engineering Elective<sup>2</sup></b>		<b>3-4</b>

**<sup>1</sup> Math/Stat/Data Elective**

Choose one of the following: STAT 134, STAT C140, IND ENG 172, or COMPSCI C100/DATA C100/STAT C100 + STAT C88S or UGBA 88 connector

**<sup>2</sup> Upper Division Engineering Elective**

Students must complete an upper division engineering elective, of at least 3 units, chosen in consultation with the student's faculty adviser. The engineering elective cannot be: any course taken on a P/NP basis; any course that counts as H/SS; BIOENG 100; CHMENG 185; DESINV courses (except 190E); ENGIN 125, 157AC, 180, 183 series, 185, 187, 195 series; INDENG 172, 185, 186, 190 series, 191, 192, 195; MECENG 190K, 191AC, 191K. Students may use three units of credit for work on a research project in MAT SCI H194 (Honors Undergraduate Research). Other letter-graded research courses may be approved by petition. Typically, this elective should be offered by a department within the College of Engineering or from the Department of Chemical & Biomolecular Engineering.

**BUSINESS ADMINISTRATION core courses**

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: M.E.T. Introductory Topics & M.E.T. Capstone Course<sup>1</sup>

**Total Units** **30**

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

**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.**

UGBA 117	Special Topics in Economic Analysis and Policy	1-4
UGBA 118	International Trade	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 125	Ethics in Accounting	3
UGBA 126	Auditing	4
UGBA 127	Special Topics in Accounting	1-4
UGBA 128	Strategic Cost Management	3
UGBA 131	Corporate Finance and Financial Statement Analysis	3
UGBA 131A	Corporate Strategy and Valuation	3
UGBA 132	Financial Institutions and Markets	3
UGBA 133	Investments	3
UGBA 134	Introduction to Financial Engineering	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	3
UGBA 155	Leadership	3
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 164	Marketing Strategy	3
UGBA 165	Advertising Strategy	3
UGBA 167	Special Topics in Marketing	1-4
UGBA 169	Pricing	3
UGBA C172	History of American Business	3
UGBA 173	Competitive Strategy	3
UGBA 174	Leading Strategy Implementation	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 191C	Communication for Leaders	2
UGBA 191I	Improvisational Leadership	3
UGBA 191L	Leadership Communication	1

UGBA 191P	Leadership and Personal Development	3
UGBA 192A	Leading Nonprofit and Social Enterprises	3
UGBA 192AC	Social Movements and Social Media	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 Responsible Business	1-4
UGBA 193B	Energy & Civilization	4
UGBA 193C	Practical Training	0.5
UGBA 193I	Business Abroad	4-6
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

### University of California Requirements

Entry Level Writing (<http://guide.berkeley.edu/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/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/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/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 or Econ 2, microeconomics and macroeconomics at any level (Econ 3, Econ 100A/B, Econ 101A/B, IAS 106/107) 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, International Baccalaureate and A-Level exams cannot be used to fulfill the breadth requirement.
- 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 letter graded technical courses (of at least 3 units each, with the exception of Engineering 25, 26 and 27). Every semester they are expected to make satisfactory progress in their declared major; satisfactory progress in the student's declared major is determined by their ESS adviser.

### 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 (<http://guide.berkeley.edu/undergraduate/education/#earningyourdegreertext>)

All students who will enter the University of California as freshmen must demonstrate their command of the English language by satisfying the Entry Level Writing Requirement (ELWR). The UC Entry Level Writing Requirement website (<https://admission.universityofcalifornia.edu/elwr/>) provides information on how to satisfy the requirement.

American History and American Institutions (<http://guide.berkeley.edu/undergraduate/education/#earningyourdegreertext>)

The American History and Institutions (AH&I) requirements are based on the principle that a US 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/undergraduate/education/#earningyourdegreertext>)

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.

		First Year	
		Fall Units	Spring Units
MATH 1A <sup>1</sup>			4 MATH 1B <sup>2</sup> 4
CHEM 1A & 1AL			5 PHYSICS 7A <sup>3</sup> 4
OR			CHEM 1B or 4B <sup>4</sup> 4
CHEM 4A <sup>4</sup> [5]			Reading & Composition course from List B <sup>5</sup> 4
MAT SCI 45 & 45L <sup>6</sup>			4 ENGIN 7 4
Reading & Composition course from List A <sup>5</sup>			4
UGBA 196 (M.E.T. Introductory Topics Course) <sup>7</sup>			2
		<b>19</b>	<b>20</b>
		Second Year	
		Fall Units	Spring Units
MATH 53			4 PHYSICS 89 <sup>8</sup> 4
UGBA 10			3 MAT SCI 151 3
STAT 134, C140, or IND ENG 172 (or COMPSCI C100/DATA C100/STAT C100 plus STAT 88 or UGBA 88) <sup>9</sup>			4 PHYSICS 7C 4
PHYSICS 7B (Breadth - Physical Science) <sup>10</sup>			4 ECON 1 or 2 <sup>10, 11</sup> 4
Breadth - Arts and Literature/AC <sup>5</sup>			4 MEC ENG C85 or CIV ENG C30 3
		<b>19</b>	<b>18</b>
		Third Year	
		Fall Units	Spring Units
Breadth - Historical Studies/AC <sup>10, 11</sup>			4 MAT SCI 103 3
MAT SCI 102			3 MAT SCI 111 4
MAT SCI 113			3 MAT SCI 112 3
ENGIN 40			4 UGBA Elective <sup>12</sup> 4
UGBA 101A			3 UGBA 101B 3
M.E.T. Capstone Course (UGBA 196) <sup>7</sup>			2 Breadth - International Studies <sup>10</sup> 3
			UGBA 100 2
		<b>19</b>	<b>18</b>
		Fourth Year	
		Fall Units	Spring Units
MAT SCI 120 Series Course			3-4 MAT SCI 104 & 104L 4
MAT SCI 130			3 UGBA 102B 3
UGBA 102A			3 UGBA 105 3
UGBA 103			4 UGBA 107 (Breadth - Philosophy and Values) <sup>10</sup> 3
UGBA 104			3 Upper Division Engineering Elective <sup>13</sup> 3
UGBA 106			3 UGBA Elective <sup>12</sup> 2
		<b>19-20</b>	<b>18</b>
<b>Total Units: 150-151</b>			

<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> 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>3</sup> PHYSICS 7A may be fulfilled with a score of 5 on the AP Physics C Mechanics exam.
- <sup>4</sup> CHEM 1A/CHEM 1AL 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. CHEM 4A and CHEM 4B are intended for students majoring in chemistry or a closely-related field.
- <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. A 5 on the AP English Literature and Composition exam, or a score of 5 or higher on the IB Higher Level English Language and Literature exam will fulfill Reading & Composition part A and part B.
- <sup>6</sup> MAT SCI 45/45L can be taken in either the Fall or Spring semesters of the first year. Both offerings deliver the same fundamental content. The Fall offering draws more examples from hard materials (e.g. semiconductors, metals and ceramics), whereas the Spring offering will draw more examples from soft materials (e.g. polymers and biomaterials).
- <sup>7</sup> M.E.T. Special Topics courses are required and will count as upper division business units.
- <sup>8</sup> Please note that PHYSICS 89 is meant to replace MATH 54. As such, students should be well prepared for any class listing MATH 54 as a prerequisite and often the departments offering those courses do not officially enforce their prerequisites in the system so there should not be an issue with enrollment.
- <sup>9</sup> Choose one of the following: STAT 134, STAT C140; IND ENG 172, or COMPSI C100/DATA C100/STAT C100 + STAT C88S or UGBA 88 connector to fulfill the MSE Math/Stat/Data Elective **and** UGBA Statistics prerequisite.
- <sup>10</sup> ECON 1 (or ECON 2) 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. 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 the College Requirements (p. 3) tab on this page for further restrictions on breadth courses.
- <sup>11</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>12</sup> Students must complete a minimum of 38 units of upper division business coursework. See UGBA Elective course list under "Major Requirements" tab.
- <sup>13</sup> Upper Division Engineering Elective: An Upper Division Engineering Elective is chosen in consultation with the student's faculty adviser. Students may use three units of credit for work on a research project in MAT SCI H194 (Honors Undergraduate Research). Other letter-graded research courses may be approved by petition. Typically, this elective should be offered by a department within the College of Engineering or from the Department of Chemical & Biomolecular Engineering.  
Upper Division Engineering Electives cannot include:

- Any course taken on a Pass/No Pass basis
- Any course that counts as M.E.T. Breadth
- Any of the following courses: BIO ENG 100; DESINV courses (except DES INV 190E); ENGIN 125, ENGIN 157AC, ENGIN 180, ENGIN 183 series, ENGIN 185, ENGIN 187, ENGIN 195 series; IND ENG 172, IND ENG 185, IND ENG 186, IND ENG 190 series, IND ENG 191, IND ENG 192, IND ENG 195; MEC ENG 190K, MEC ENG 191AC, MEC ENG 191K.

Major Maps help undergraduate students discover academic, co-curricular, and discovery opportunities at UC Berkeley based on intended major or field of interest. Developed by the Division of Undergraduate Education in collaboration with academic departments, these experience maps will help you:

- **Explore** your major and gain a better understanding of your field of study
- **Connect** with people and programs that inspire and sustain your creativity, drive, curiosity and success
- **Discover** opportunities for independent inquiry, enterprise, and creative expression
- **Engage** locally and globally to broaden your perspectives and change the world
- **Reflect** on your academic career and prepare for life after Berkeley

Use the major map below as a guide to planning your undergraduate journey and designing your own unique Berkeley experience.

View the Management, Entrepreneurship, & Technology (M.E.T.) Major Map PDF. ([https://ue.berkeley.edu/sites/default/files/management\\_entrepreneurship\\_technology.pdf](https://ue.berkeley.edu/sites/default/files/management_entrepreneurship_technology.pdf))

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

## MAT SCI 24 Freshman Seminar 1 Unit

Terms offered: Spring 2023, Spring 2022, Spring 2020

The Freshman 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. Freshman seminars are offered in all campus departments, and topics vary from department to department and semester to semester. Enrollment limited to 20 freshmen.

Freshman Seminar: Read More [+]

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final Exam To be decided by the instructor when the class is offered.

Freshman Seminar: Read Less [-]

## MAT SCI 45 Properties of Materials 3 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023

Application of basic principles of physics and chemistry to the engineering properties of materials. Emphasis on establishing structure, property, processing, and performance interrelationships in metals, ceramics, and polymers. While core concepts are fully covered each semester, examples and contextualization in Fall editions focuses on metals, ceramics, and functional/electronic properties and in Spring editions on polymers and soft-materials.

Properties of Materials: Read More [+]

### Rules & Requirements

**Prerequisites:** Students should have completed high school AP or honors chemistry and physics

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructors:** Martin, Messersmith

Properties of Materials: Read Less [-]

## MAT SCI 45L Properties of Materials Laboratory 1 Unit

Terms offered: Fall 2024, Spring 2024, Fall 2023

This course presents laboratory applications of the basic principles introduced in the lecture-based course MSE45 – Properties of Materials.

Properties of Materials Laboratory: Read More [+]

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for MSE 45L after taking E45L

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructors:** Martin, Messersmith

Properties of Materials Laboratory: Read Less [-]

## MAT SCI 102 Bonding, Crystallography, and Crystal Defects 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

Bonding in solids; classification of metals, semiconductors, and insulators; crystal systems; point, line, and planar defects in crystals; examples of crystallographic and defect analysis in engineering materials; relationship to physical and mechanical properties.

Bonding, Crystallography, and Crystal Defects: Read More [+]

### Rules & Requirements

**Prerequisites:** MAT SCI 45

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructor:** Sherburne

Bonding, Crystallography, and Crystal Defects: Read Less [-]

## MAT SCI 103 Phase Transformations and Kinetics 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

The nature, mechanisms, and kinetics of phase transformations and microstructural changes in the solid state. Atom diffusion in solids. Phase transformations through the nucleation and growth of new matrix or precipitate phases. Martensitic transformations, spinodal decomposition. The use of phase transformations to control microstructure.

Phase Transformations and Kinetics: Read More [+]

### Rules & Requirements

**Prerequisites:** MAT SCI 102 and ENGIN 40

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

Phase Transformations and Kinetics: Read Less [-]

## MAT SCI 104 Materials Characterization 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This 3-unit course will cover basic principles and techniques used for the characterization of engineering materials. The course is designed to introduce undergraduate students to the basic principles of structural, chemical and property characterization techniques. The course is grounded in modern x-ray diffraction and electron microscopy techniques for characterization of the chemical and structural properties of a material. The course introduces the fundamental theoretical framework for diffraction, spectrometry and imaging methods.

Materials Characterization: Read More [+]

### Objectives & Outcomes

**Course Objectives:** Materials characterization lies at the heart of understanding the property-structure-processing relationships of materials. The goal of the course is to prepare undergraduate students from materials science to understand the basic principles behind material characterization tools and techniques. More specifically, this class will provide students (1) a thorough introduction to the principles and practice of diffraction, (2) introductory exposure to a range of common characterization methods for the determination of structure and composition of solids. A successful student will learn (1) the theory of x-ray and electron diffraction, (2) basic elements of electron microscopy, (3) basic aspects of optical and scanning probe techniques.

### Rules & Requirements

**Prerequisites:** MAT SCI 102. A basic knowledge of structure, bonding and crystallography will be assumed

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructors:** Scott, Minor

Materials Characterization: Read Less [-]

## MAT SCI 104L Materials Characterization Laboratory 1 Unit

Terms offered: Spring 2024, Spring 2023, Spring 2022

This 1-unit laboratory course covers X-ray diffraction (XRD), scanning electron microscopy (SEM), and transmission electron microscopy (TEM), as well as lab writeup protocols and academic integrity. Students will get hands-on experience using the XRD, SEM and TEM equipment to perform microstructural characterization of materials. Students will also design and run their own project on a topic of their choosing.

Materials Characterization Laboratory: Read More [+]

### Objectives & Outcomes

**Course Objectives:** Practical experience on the most common materials characterization equipment for structural and chemical analysis of materials. Introduction to laboratory procedures and independent projects.

### Rules & Requirements

**Prerequisites:** MAT SCI 102; and MAT SCI 104 must be taken concurrently. A basic knowledge of structure, bonding and crystallography will be assumed. Undergraduate student in engineering, physics or chemistry

### Hours & Format

**Fall and/or spring:** 15 weeks - 1.5 hours of laboratory and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructors:** Scott, Minor

Materials Characterization Laboratory: Read Less [-]

## **MAT SCI 111 Properties of Electronic Materials 4 Units**

Terms offered: Spring 2024, Spring 2023, Spring 2022

Introduction to the physical principles underlying the electric properties of modern solids with emphasis on semiconductors; control of defects and impurities through physical purification, bulk and thin film crystal growth and doping processes, materials basis of electronic and optoelectronic devices (diodes, transistors, semiconductor lasers) and optical fibers; properties of metal and oxide superconductors and their applications.

Properties of Electronic Materials: Read More [+]

### **Rules & Requirements**

**Prerequisites:** PHYSICS 7A, PHYSICS 7B, and PHYSICS 7C; or PHYSICS 7A, PHYSICS 7B and 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:** Materials Science and Engineering/  
Undergraduate

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

**Instructors:** Dubon, Wu, Yao

Properties of Electronic Materials: Read Less [-]

## **MAT SCI 112 Corrosion (Chemical Properties) 3 Units**

Terms offered: Spring 2024, Spring 2023, Spring 2022

Electrochemical theory of corrosion. Mechanisms and rates in relation to physicochemical and metallurgical factors. Stress corrosion and mechanical influences on corrosion. Corrosion protection by design, inhibition, cathodic protection, and coatings.

Corrosion (Chemical Properties): Read More [+]

### **Rules & Requirements**

**Prerequisites:** MAT SCI 45 and ENGIN 40

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

**Instructor:** Devine

Corrosion (Chemical Properties): Read Less [-]

## **MAT SCI 113 Mechanical Behavior of Engineering Materials 3 Units**

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course covers elastic and plastic deformation under static/dynamic loads. Prediction/prevention of failure by yielding, fracture, fatigue, wear and environmental effects are addressed. Design issues of materials selection for load-bearing applications are discussed. Case studies of engineering failures are presented. Topics include engineering materials, structure-property relationships, mechanical behavior of metals, ceramics, polymers and composites, complex stress/strain states, stress concentrations, multiaxial loading, plasticity, yield criteria, dislocations, strengthening mechanisms, creep, fracture mechanics and fatigue.

Mechanical Behavior of Engineering Materials: Read More [+]

### **Rules & Requirements**

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

**Credit Restrictions:** Students will receive no credit for 113 after taking C113 or Mechanical Engineering C124. Deficiency in C113 or Mechanical Engineering C124 maybe removed by taking 113.

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

**Instructor:** Ritchie

Mechanical Behavior of Engineering Materials: Read Less [-]



## MAT SCI 117 Properties of Dielectric and Magnetic Materials 3 Units

Terms offered: Spring 2021, Spring 2017, Spring 2011

Introduction to the physical principles underlying the dielectric and magnetic properties of solids. Processing-microstructure-property relationships of dielectric materials, including piezoelectric, pyroelectric, and ferroelectric oxides, and of magnetic materials, including hard- and soft ferromagnets, ferrites and magneto-optic and -resistive materials.

The course also covers the properties of grain boundary devices (including varistors) as well as ion-conducting and mixed conducting materials for applications in various devices such as sensors, fuel cells, and electric batteries.

Properties of Dielectric and Magnetic Materials: Read More [+]

### Rules & Requirements

**Prerequisites:** PHYSICS 7A, PHYSICS 7B, and PHYSICS 7C; or PHYSICS 7A, PHYSICS 7B, and consent of instructor. MAT SCI 111 is recommended

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

Properties of Dielectric and Magnetic Materials: Read Less [-]

## MAT SCI C118 Biological Performance of Materials 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course is intended to give students the opportunity to expand their knowledge of topics related to biomedical materials selection and design. Structure-property relationships of biomedical materials and their interaction with biological systems will be addressed. Applications of the concepts developed include blood-materials compatibility, biomimetic materials, hard and soft tissue-materials interactions, drug delivery, tissue engineering, and biotechnology.

Biological Performance of Materials: Read More [+]

### Objectives & Outcomes

**Course Objectives:** The course is separated into four parts spanning the principles of synthetic materials and surfaces, principles of biological materials, biological performance of materials and devices, and state-of-the-art materials design. Students are required to attend class and master the material therein. In addition, readings from the clinical, life and materials science literature are assigned. Students are encouraged to seek out additional reference material to complement the readings assigned. A mid-term examination is given on basic principles (parts 1 and 2 of the outline). A comprehensive final examination is given as well. The purpose of this course is to introduce students to problems associated with the selection and function of biomaterials. Through class lectures and readings in both the physical and life science literature, students will gain broad knowledge of the criteria used to select biomaterials, especially in devices where the material-tissue or material-solution interface dominates performance. Materials used in devices for medicine, dentistry, tissue engineering, drug delivery, and the biotechnology industry will be addressed.

This course also has a significant design component (~35%). Students will form small teams (five or less) and undertake a semester-long design project related to the subject matter of the course. The project includes the preparation of a paper and a 20 minute oral presentation critically analyzing a current material-tissue or material-solution problem. Students will be expected to design improvements to materials and devices to overcome the problems identified in class with existing materials.

### Student Learning Outcomes:

Apply math, science & engineering principles to the understanding of soft materials, surface chemistry, DLVO theory, protein adsorption kinetics, viscoelasticity, mass diffusion, and molecular (i.e., drug) delivery kinetics.

- Design experiments and analyze data from the literature in the context of the class design project.
- Apply core concepts in materials science to solve engineering problems related to the selection biomaterials, especially in devices where the material-tissue or material-solution interface dominates performance.
- Develop an understanding of the social, safety and medical consequences of biomaterial use and regulatory issues associated with the selection of biomaterials in the context of the silicone breast implant controversy and subsequent biomaterials crisis.
- Work independently and function on a team, and develop solid communication skills (oral, graphic & written) through the class design project.
- Understanding of the origin of surface forces and interfacial free energy, and how they contribute to the development of the biomaterial interface and ultimately biomaterial performance.

### Rules & Requirements

**Prerequisites:** MAT SCI 45 and BIO ENG 103 are required. BIO ENG 102 and BIO ENG 104 are strongly recommended

## **MAT SCI 120 Materials Production 3 Units**

Terms offered: Fall 2022, Fall 2021, Fall 2020

Economic and technological significance of metals and other materials. Elementary geology (composition of lithosphere, mineralization). Short survey of mining and mineral processing techniques. Review of chemical thermodynamics and reaction kinetics. Principles of process engineering including material, heat, and mechanical energy balances. Elementary heat transfer, fluid flow, and mass transfer. Electrolytic production and refining of metals. Vapor techniques for production of metals and coatings.

Materials Production: Read More [+]

### **Rules & Requirements**

**Prerequisites:** ENGIN 40, MEC ENG 40, CHM ENG 141, CHEM 120B, or equivalent thermodynamics course

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

Materials Production: Read Less [-]

## **MAT SCI 121 Metals Processing 3 Units**

Terms offered: Spring 2019, Spring 2015, Spring 2014

The principles of metals processing with emphasis on the use of processing to establish microstructures which impart desirable engineering properties. The techniques discussed include solidification, thermal and mechanical processing, powder processing, welding and joining, and surface treatments.

Metals Processing: Read More [+]

### **Rules & Requirements**

**Prerequisites:** MAT SCI 45

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructor:** Gronsky

Metals Processing: Read Less [-]

## **MAT SCI 122 Ceramic Processing 3 Units**

Terms offered: Fall 2012, Fall 2011, Fall 2010

Powder fabrication by grinding and chemical methods, rheological behavior of powder-fluid suspensions, forming methods, drying, sintering, and grain growth. Relation of processing steps to microstructure development.

Ceramic Processing: Read More [+]

### **Rules & Requirements**

**Prerequisites:** MAT SCI 45 and ENGIN 40

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

Ceramic Processing: Read Less [-]

## MAT SCI 123 ELECTRONIC MATERIALS PROCESSING 4 Units

Terms offered: Spring 2022, Spring 2021, Spring 2020

This 4-unit course starts with a brief review of the fundamentals of solid-state physics including bands and defects in semiconductors and oxides, and then moves to bulk semiconductor crystals growth and processing including doping, diffusion and implantation, and then to thin film deposition and processing methods, and finishes with a discussion of materials analysis and characterization. Recent advances in nanomaterials research will also be introduced.

ELECTRONIC MATERIALS PROCESSING: [Read More](#) [+]

### Objectives & Outcomes

**Course Objectives:** To prepare students a) for work in semiconductor processing facilities and b) for graduate studies related to thin film processing and relevant materials science topics.

To present the relevant materials science issues in semiconductor and oxide processing.

To provide an introduction into the principles of thin film processing and related technologies.

**Student Learning Outcomes:** Basic knowledge of gas kinetics and vacuum technology, including ideal gas, gas transport theory, definition, creation and measurement of vacuum.

Knowledge of electrical and optical properties of thin films.

Knowledge of the formation of p-n junction to explain the diode operation and its I-V characteristics. Understanding of the mechanisms of Hall Effect, transport, and C-V measurements, so that can calculate carrier concentration, mobility and conductivity given raw experimental data.

The ability to describe major growth techniques of bulk, thin film, and nanostructured semiconductors, with particular emphasis on thin film deposition technologies, including evaporation, sputtering, chemical vapor deposition and epitaxial growths.

To have basic knowledge of doping, purification, oxidation, gettering, diffusion, implantation, metallization, lithography and etching in semiconductor processing.

To have basic knowledge of electronic material characterization methods: x-ray diffraction, SEM and TEM, EDX, Auger, STM and AFM, Rutherford Back Scattering and SIMS, as well as optical methods including photoluminescence, absorption and Raman scattering.

To understand the concepts of bands, bandgap, to distinguish direct and indirect bandgap semiconductors. Understanding of free electron and hole doping of semiconductors to determine Fermi level position.

To understand the effect of defects in semiconductors, so that can describe their electronic and optical behaviors, and the methods to eliminate and control them in semiconductors.

### Rules & Requirements

**Prerequisites:** MAT SCI 111, PHYSICS 7C, or consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructors:** Wu, Yao

ELECTRONIC MATERIALS PROCESSING: [Read Less](#) [-]

## MAT SCI 125 Thin-Film Materials Science 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

Deposition, processing, and characterization of thin films and their technological applications. Physical and chemical vapor deposition methods. Thin-film nucleation and growth. Thermal and ion processing. Microstructural development in epitaxial, polycrystalline, and amorphous films. Thin-film characterization techniques. Applications in information storage, integrated circuits, and optoelectronic devices. Laboratory demonstrations.

Thin-Film Materials Science: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** Upper division or graduate standing in Engineering, Physics, Chemistry, or Chemical Engineering; and MAT SCI 45. PHYSICS 111A or PHYSICS 141A recommended

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructor:** Dubon

Thin-Film Materials Science: [Read Less](#) [-]

## MAT SCI 127 Introduction to Additive Manufacturing: Process, Materials and Designs 3 Units

Terms offered: Spring 2024, Spring 2023

Additive manufacturing, the industrial name of 3D printing, pertains to the general class of technologies that, using computer-created (CAD) solid models as input, creates three-dimensional (3D) artifacts through the successive formation of materials. Students will learn the engineering principles and frontiers of additive manufacturing systems and their applications to transforming the rapid prototyping to the paradigm of Additive Manufacturing (AM) for creating functional parts, materials and assembly. Students will apply their learning through class projects wherein they will design novel products via AM, design new AM systems and manufacturing strategies for novel materials. Class will also explore advanced design topics enabled by AM

Introduction to Additive Manufacturing: Process, Materials and Designs: Read More [+]

### Rules & Requirements

**Prerequisites:** PHYSICS 7A (recommended), MAT SCI 45, MEC ENG C85/CIV ENG C30, or consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

**Instructor:** Zheng

Introduction to Additive Manufacturing: Process, Materials and Designs: Read Less [-]

## MAT SCI 129 Experimental Materials Science of Thin Films and Coatings 3 Units

Terms offered: Spring 2022

This course covers the fundamental experimental materials science and processing of thin film and coatings that incorporates fundamental knowledge of materials transport, accumulation, defects and epitaxy. Through this course, an understanding of the fundamental physical and chemical processes which are involved in crystal growth and thin film fabrication will be gained. Important synthesis and processing techniques used for the fabrication of electronic and photonic devices will be discussed. Finally, it will provide an understanding of how material characteristics are influenced by processing and deposition conditions. This course addresses current challenges and future needs of the semiconductor and coating industries.

Experimental Materials Science of Thin Films and Coatings: Read More [+]

### Objectives & Outcomes

**Student Learning Outcomes:** The development of proper protocols for data collection, analysis, and dissemination.

To apply this knowledge to scholarly report writing and the hypothesis driven insights and conclusions.

To familiarize students with some of the important experimental methods growth of materials.

To gain an understanding of how material characteristics are influenced by processing and deposition conditions of thin films and coatings.

To gain an understanding of the fundamental physical and chemical processes which are involved in crystal growth and thin film fabrication.

### Rules & Requirements

**Prerequisites:** MAT SCI 45, MAT SCI 104, and MAT SCI 125; 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:** Materials Science and Engineering/ Undergraduate

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

**Instructor:** Al Balushi

Experimental Materials Science of Thin Films and Coatings: Read Less [-]

## MAT SCI 130 Experimental Materials Science and Design 3 Units

Terms offered: Fall 2023, Fall 2022, Fall 2021

This course provides a culminating experience for students approaching completion of the materials science and engineering curriculum.

Laboratory experiments are undertaken in a variety of areas from the investigations on semiconductor materials to corrosion science and elucidate the relationships among structure, processing, properties, and performance. The principles of materials selection in engineering design are reviewed.

Experimental Materials Science and Design: Read More [+]

### Rules & Requirements

**Prerequisites:** Senior standing 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:** Materials Science and Engineering/  
Undergraduate

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

Experimental Materials Science and Design: Read Less [-]

## MAT SCI 136 Materials in Energy Technologies 4 Units

Terms offered: Fall 2021, Fall 2019, Fall 2017

In many, if not all, technologies, it is materials that play a crucial, enabling role. This course examines potentially sustainable technologies, and the materials properties that enable them. The science at the basis of selected energy technologies are examined and considered in case studies.

Materials in Energy Technologies: Read More [+]

### Rules & Requirements

**Prerequisites:** Junior or above standing in Materials Science and Engineering or related field

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

**Formerly known as:** Materials Science and Engineering 126

Materials in Energy Technologies: Read Less [-]

## MAT SCI 140 Nanomaterials for Scientists and Engineers 3 Units

Terms offered: Spring 2022, Spring 2020, Spring 2015

This course introduces the fundamental principles needed to understand the behavior of materials at the nanometer length scale and the different classes of nanomaterials with applications ranging from information technology to biotechnology. Topics include introduction to different classes of nanomaterials, synthesis and characterization of nanomaterials, and the electronic, magnetic, optical, and mechanical properties of nanomaterials.

Nanomaterials for Scientists and Engineers: Read More [+]

### Rules & Requirements

**Prerequisites:** PHYSICS 7C and MAT SCI 45. MAT SCI 102 recommended

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

**Instructor:** Zheng

Nanomaterials for Scientists and Engineers: Read Less [-]

## MAT SCI C150 Introduction to Materials Chemistry 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

The application of basic chemical principles to problems in materials discovery, design, and characterization will be discussed. Topics covered will include inorganic solids, nanoscale materials, polymers, and biological materials, with specific focus on the ways in which atomic-level interactions dictate the bulk properties of matter.

Introduction to Materials Chemistry: Read More [+]

### Rules & Requirements

**Prerequisites:** CHEM 104A. CHEM 104B recommended

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

**Also listed as:** CHEM C150

Introduction to Materials Chemistry: Read Less [-]

## **MAT SCI 151 Polymeric Materials 3 Units**

Terms offered: Spring 2024, Spring 2023, Spring 2022

This course is designed for upper division undergraduate and graduate students to gain a fundamental understanding of the science of polymeric materials. Beginning with a treatment of ideal polymeric chain conformations, it develops the thermodynamics of polymer blends and solutions, the modeling of polymer networks and gels, the dynamics of polymer chains, and the morphologies of thin films and other dimensionally-restricted structures relevant to nanotechnology.

Polymeric Materials: Read More [+]

### **Rules & Requirements**

**Prerequisites:** CHEM 1A or MAT SCI 45. MAT SCI 103 is recommended

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

**Instructor:** Xu

Polymeric Materials: Read Less [-]

## **MAT SCI C157 Nanomaterials in Medicine 3 Units**

Terms offered: Fall 2022, Fall 2021, Fall 2020

Nanomedicine is an emerging field involving the use of nanoscale materials for therapeutic and diagnostic purposes. Nanomedicine is a highly interdisciplinary field involving chemistry, materials science, biology and medicine, and has the potential to make major impacts on healthcare in the future. This upper division course is designed for students interested in learning about current developments and future trends in nanomedicine. The overall objective of the course is to introduce major aspects of nanomedicine including the selection, design and testing of suitable nanomaterials, and key determinants of therapeutic and diagnostic efficacy. Organic, inorganic and hybrid nanomaterials will be discussed in this course.

Nanomaterials in Medicine: Read More [+]

### **Objectives & Outcomes**

**Course Objectives:** To identify an existing or unmet clinical need and identify a nanomedicine that can provide a solution  
To learn about chemical approaches used in nanomaterial synthesis and surface modification.  
To learn how to read and critique the academic literature.  
To understand the interaction of nanomaterials with proteins, cells, and biological systems.

### **Rules & Requirements**

**Prerequisites:** MAT SCI 45 or consent of instructor

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

**Instructor:** Messersmith

**Also listed as:** BIO ENG C157

Nanomaterials in Medicine: Read Less [-]

## MAT SCI 159 Introduction to Soft Matter 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

Soft matter is ubiquitous in synthetic materials and plays a central role in living systems. This course aims to provide students with an introduction to the physics that govern the structure and dynamics of soft matter systems, including polymers, colloids, surfactants, membranes, and active matter. A particular emphasis will be placed on connecting a microscopic physical picture to the emergent phenomena and properties of interest using scaling theory and statistical mechanics.

Specific topics will include Brownian motion and colloidal dynamics, the depletion force, polymer chain conformation, rubber elasticity; and surfactant and liquid crystal thermodynamics.

Introduction to Soft Matter: Read More [+]

### Rules & Requirements

**Prerequisites:** ENGIN 40, PHYSICS 5C, CHEM 120B, CHEM ENG 141, or MECH ENG 40

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and 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.).

**Instructor:** Omar

Introduction to Soft Matter: Read Less [-]

## MAT SCI H194 Honors Undergraduate Research 1 - 4 Units

Terms offered: Fall 2016, Spring 2016, Fall 2015

Students who have completed a satisfactory number of advanced courses with a grade-point average of 3.3 or higher may pursue original research under the direction of one of the members of the staff. A maximum of 3 units of H194 may be used to fulfill technical elective requirements in the Materials Science and Engineering program or double majors (unlike 198 or 199, which do not satisfy technical elective requirements). Final report required.

Honors Undergraduate Research: Read More [+]

### Rules & Requirements

**Prerequisites:** Upper division technical GPA of 3.3 or higher and consent of instructor and adviser

**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 - 1.5-7.5 hours of independent study per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

Honors Undergraduate Research: Read Less [-]

## MAT SCI 195 Special Topics for Advanced Undergraduates 1 Unit

Terms offered: Spring 2012, Spring 2011, Spring 2010

Group study of special topics in materials science and engineering. Selection of topics for further study of underlying concepts and relevant literature, in consultation with appropriate faculty members.

Special Topics for Advanced Undergraduates: Read More [+]

### Rules & Requirements

**Prerequisites:** Upper division standing and good academic standing. (2.0 gpa and above)

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/ Undergraduate

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

Special Topics for Advanced Undergraduates: Read Less [-]

## MAT SCI 198 Directed Group Studies for Advanced Undergraduates 1 - 4 Units

Terms offered: Spring 2019, Fall 2018, Spring 2016

Group studies of selected topics.

Directed Group Studies for Advanced Undergraduates: Read More [+]

### Rules & Requirements

**Prerequisites:** Upper division standing in Engineering

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

Directed Group Studies for Advanced Undergraduates: Read Less [-]

## MAT SCI 199 Supervised Independent Study 1 - 4 Units

Terms offered: Spring 2023, Fall 2022, Spring 2022

Supervised independent study. Enrollment restrictions apply; see the Introduction to Courses and Curricula section of this catalog.

Supervised Independent Study: Read More [+]

### Rules & Requirements

**Prerequisites:** Consent of instructor and major adviser

**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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/  
Undergraduate

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

Supervised Independent Study: Read Less [-]

## MAT SCI 200A Survey of Materials Science 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

A survey of Materials Science at the beginning graduate level, intended for those who did not major in the field as undergraduates. Focus on the nature of microstructure and its manipulation and control to determine engineering properties. Reviews bonding, structure and microstructure, the chemical, electromagnetic and mechanical properties of materials, and introduces the student to microstructural engineering.

Survey of Materials Science: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing or consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

Survey of Materials Science: Read Less [-]

## MAT SCI 201A Thermodynamics and Phase Transformations in Solids 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

The laws of thermodynamics, fundamental equations for multicomponent elastic solids and electromagnetic media, equilibrium criteria. Application to solution thermodynamics, point defects in solids, phase diagrams.

Phase transitions, Landau rule, symmetry rules. Interfaces, nucleation theory, elastic effects. Kinetics: diffusion of heat, mass and charge; coupled flows.

Thermodynamics and Phase Transformations in Solids: Read More [+]

### Rules & Requirements

**Prerequisites:** MAT SCI 102, MAT SCI 103, ENGIN 40, 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:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Ceder

Thermodynamics and Phase Transformations in Solids: Read Less [-]



## MAT SCI 201B Thermodynamics, Phase Behavior and Transport Phenomena in Materials 4 Units

Terms offered: Spring 2024, Spring 2023, Fall 2021

This course will cover the laws of classical thermodynamics, principles of statistical mechanics, and laws governing the transport of mass and momentum in materials. Applications will include the construction of equilibrium and nonequilibrium phase diagrams and the kinetics of phase transformations in both soft and hard materials.

Thermodynamics, Phase Behavior and Transport Phenomena in Materials: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** 102, 103, Engineering 115 or consent of instructor. 201A is a prerequisite to 201B

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Omar

Thermodynamics, Phase Behavior and Transport Phenomena in Materials: [Read Less](#) [-]

## MAT SCI 202 Crystal Structure and Bonding 4 Units

Terms offered: Spring 2024, Spring 2022, Spring 2020

Regular, irregular arrays of points, spheres; lattices, direct, reciprocal; crystallographic point and space groups; atomic structure; bonding in molecules; bonding in solids; ionic (Pauling rules), covalent, metallic bonding; structure of elements, compounds, minerals, polymers.

Crystal Structure and Bonding: [Read More](#) [+]

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Chrzan

Crystal Structure and Bonding: [Read Less](#) [-]

## MAT SCI 204 Materials Characterization 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This 3-unit course will cover basic principles and techniques used for the characterization of engineering materials. The course is designed to introduce graduate students to the basic principles of structural, chemical and property characterization techniques. The course is grounded in modern x-ray diffraction and electron microscopy techniques for characterization of the chemical and structural properties of a material.

The course introduces the fundamental theoretical framework for diffraction, spectrometry and imaging methods.

Materials Characterization: [Read More](#) [+]

### Objectives & Outcomes

**Course Objectives:** Materials characterization lies at the heart of understanding the property-structure-processing relationships of materials. The goal of the course is to prepare graduate students from materials science to understand the basic principles behind material characterization tools and techniques. More specifically, this class will provide students (1) a thorough introduction to the principles and practice of diffraction, (2) introductory exposure to a range of common characterization methods for the determination of structure and composition of solids.

**Student Learning Outcomes:** A successful student will learn (1) the theory of x-ray and electron diffraction, (2) basic elements of electron microscopy, (3) basic aspects of spectroscopy.

### Rules & Requirements

**Prerequisites:** MAT SCI 102- a basic knowledge of structure, bonding and crystallography will be assumed

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Scott, Minor

Materials Characterization: [Read Less](#) [-]

## MAT SCI 204D Materials Characterization 1 Unit

Terms offered: Spring 2024, Spring 2023, Spring 2022

This 1-unit course will introduce specialized techniques used for the characterization of engineering materials beyond routine x-ray diffraction and electron microscopy. The course is designed to complement a basic course in x-ray diffraction and electron microscopy by introducing graduate students to characterization methods such as ion beam analysis, magnetic measurements, synchrotron techniques, scanning probe techniques, neutron scattering, optical spectroscopy and dynamic characterization.

Materials Characterization: Read More [+]

### Objectives & Outcomes

**Course Objectives:** Materials characterization lies at the heart of understanding the property-structure-processing relationships of materials. The goal of the course is to prepare graduate students from materials science and related disciplines to understand the basic principles behind ion beam analysis, magnetic measurements, synchrotron techniques, scanning probe techniques, neutron scattering, optical spectroscopy and dynamic characterization.

### Rules & Requirements

**Prerequisites:** Graduate standing in engineering, physics or chemistry; MAT SCI 102; and concurrent enrollment in MAT SCI 204

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Scott, Minor

Materials Characterization: Read Less [-]

## MAT SCI 205 Defects in Solids 3 Units

Terms offered: Spring 2022, Spring 2020, Spring 2014

Many properties of solid state materials are determined by lattice defects. This course treats in detail the structure of crystal defects, defect formation and annihilation processes, and the influence of lattice defects on the physical and optical properties of crystalline materials.

Defects in Solids: Read More [+]

### Rules & Requirements

**Prerequisites:** PHYSICS 7C or consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Ramesh

Defects in Solids: Read Less [-]

## MAT SCI C208 Biological Performance of Materials 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course is intended to give students the opportunity to expand their knowledge of topics related to biomedical materials selection and design. Structure-property relationships of biomedical materials and their interaction with biological systems will be addressed. Applications of the concepts developed include blood-materials compatibility, biomimetic materials, hard and soft tissue-materials interactions, drug delivery, tissue engineering, and biotechnology.

Biological Performance of Materials: Read More [+]

### Objectives & Outcomes

**Course Objectives:** The course is separated into four parts spanning the principles of synthetic materials and surfaces, principles of biological materials, biological performance of materials and devices, and state-of-the-art materials design. Students are required to attend class and master the material therein. In addition, readings from the clinical, life and materials science literature are assigned. Students are encouraged to seek out additional reference material to complement the readings assigned. A mid-term examination is given on basic principles (parts 1 and 2 of the outline). A comprehensive final examination is given as well. The purpose of this course is to introduce students to problems associated with the selection and function of biomaterials. Through class lectures and readings in both the physical and life science literature, students will gain broad knowledge of the criteria used to select biomaterials, especially in devices where the material-tissue or material-solution interface dominates performance. Materials used in devices for medicine, dentistry, tissue engineering, drug delivery, and the biotechnology industry will be addressed.

This course also has a significant design component (~35%). Students will form small teams (five or less) and undertake a semester-long design project related to the subject matter of the course. The project includes the preparation of a paper and a 20 minute oral presentation critically analyzing a current material-tissue or material-solution problem. Students will be expected to design improvements to materials and devices to overcome the problems identified in class with existing materials.

**Student Learning Outcomes:** Work independently and function on a team, and develop solid communication skills (oral, graphic & written) through the class design project.

- Develop an understanding of the social, safety and medical consequences of biomaterial use and regulatory issues associated with the selection of biomaterials in the context of the silicone breast implant controversy and subsequent biomaterials crisis.
- Design experiments and analyze data from the literature in the context of the class design project.
- Understanding of the origin of surface forces and interfacial free energy, and how they contribute to the development of the biomaterial interface and ultimately biomaterial performance.
- Apply math, science & engineering principles to the understanding of soft materials, surface chemistry, DLVO theory, protein adsorption kinetics, viscoelasticity, mass diffusion, and molecular (i.e., drug) delivery kinetics.
- Apply core concepts in materials science to solve engineering problems related to the selection biomaterials, especially in devices where the material-tissue or material-solution interface dominates performance.

### Rules & Requirements

**Prerequisites:** MAT SCI 45; and CHEM C130 / MCEU BLC100A or

## MAT SCI C211 Mechanics of Solids 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

Mechanical response of materials: Simple tension in elastic, plastic and viscoelastic members. Continuum mechanics: The stress and strain tensors, equilibrium, compatibility. Three-dimensional elastic, plastic and viscoelastic problems. Thermal, transformation, and dealloying stresses. Applications: Plane problems, stress concentrations at defects, metal forming problems.

Mechanics of Solids: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing or consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Govindjee

**Also listed as:** CIV ENG C231

Mechanics of Solids: Read Less [-]

## MAT SCI C212 Deformation and Fracture of Engineering Materials 4 Units

Terms offered: Spring 2024, Spring 2022, Spring 2021

This course covers deformation and fracture behavior of engineering materials for both monotonic and cyclic loading conditions.

Deformation and Fracture of Engineering Materials: Read More [+]

### Rules & Requirements

**Prerequisites:** Civil Engineering 130, Engineering 45

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Ritchie, Pruitt, Komvopoulos

**Formerly known as:** Materials Science and Engineering C212, Mechanical Engineering C225

**Also listed as:** MEC ENG C225

Deformation and Fracture of Engineering Materials: Read Less [-]

## MAT SCI 213 Environmental Effects on Materials Properties and Behavior 3 Units

Terms offered: Fall 2014, Fall 2013, Fall 2012

Review of electrochemical aspects of corrosion; pitting and crevice corrosion; active/passive transition; fracture mechanics approach to corrosion; stress corrosion cracking; hydrogen embrittlement; liquid metal embrittlement; corrosion fatigue; testing methods.

Environmental Effects on Materials Properties and Behavior: Read More [+]

### Rules & Requirements

**Prerequisites:** MSE 112 or equivalent

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Devine

Environmental Effects on Materials Properties and Behavior: Read Less [-]

## MAT SCI C214 Micromechanics 3 Units

Terms offered: Fall 2023, Spring 2022, Spring 2018

Basic theories, analytical techniques, and mathematical foundations of micromechanics. It includes 1. physical micromechanics, such as mathematical theory of dislocation, and cohesive fracture models; 2. micro-elasticity that includes Eshelby's eigenstrain theory, comparison variational principles, and micro-crack/micro-cavity based damage theory; 3. theoretical composite material that includes the main methodologies in evaluating overall material properties; 4. meso-plasticity that includes meso-damage theory, and the crystal plasticity; 5. homogenization theory for materials with periodic structures.

Micromechanics: Read More [+]

### Rules & Requirements

**Prerequisites:** Consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Govindjee, Li

**Also listed as:** CIV ENG C236

Micromechanics: Read Less [-]

## MAT SCI 215 Computational Materials Science 3 Units

Terms offered: Fall 2021, Fall 2019, Spring 2019

Introduction to computational materials science. Development of atomic scale simulations for materials science applications. Application of kinetic Monte Carlo, molecular dynamics, and total energy techniques to the modeling of surface diffusion processes, elastic constants, ideal shear strengths, and defect properties. Introduction to simple numerical methods for solving coupled differential equations and for studying correlations.

Computational Materials Science: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** Graduate standing in engineering or sciences, or consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Chrzan, Asta, Ceder, Sherburne

Computational Materials Science: [Read Less](#) [-]

## MAT SCI C216 Macromolecular Science in Biotechnology and Medicine 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

Overview of the problems associated with the selection and function of polymers used in biotechnology and medicine. Principles of polymer science, polymer synthesis, and structure-property-performance relationships of polymers. Particular emphasis is placed on the performance of polymers in biological environments. Interactions between macromolecular and biological systems for therapy and diagnosis. Specific applications will include drug delivery, gene therapy, tissue engineering, and surface engineering.

Macromolecular Science in Biotechnology and Medicine: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** BIO ENG 115. Open to seniors with 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:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Healy

**Also listed as:** BIO ENG C216

Macromolecular Science in Biotechnology and Medicine: [Read Less](#) [-]

## MAT SCI 217 Properties of Dielectric and Magnetic Materials 3 Units

Terms offered: Spring 2021, Fall 2020, Spring 2017

Introduction to the physical principles underlying the dielectric and magnetic properties of solids. Processing-microstructure-property relationships of dielectric materials, including piezoelectric, pyroelectric, and ferroelectric oxides, and of magnetic materials, including hard- and soft ferromagnets, ferrites and magneto-optic and -resistive materials. The course also covers the properties of grain boundary devices (including varistors) as well as ion-conducting and mixed conducting materials for applications in various devices such as sensors, fuel cells, and electric batteries.

Properties of Dielectric and Magnetic Materials: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** PHYSICS 7A, PHYSICS 7B, and PHYSICS 7C; or PHYSICS 7A, PHYSICS 7B, and consent of instructor; MAT SCI 111 is recommended

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Martin

Properties of Dielectric and Magnetic Materials: [Read Less](#) [-]

## MAT SCI 218 Optical Materials and Devices 3 Units

Terms offered: Spring 2024, Fall 2021, Fall 2020

This course provides an overview of the fundamental physics, processing and device applications of optical materials, including conventional and van der Waals semiconductors, plasmonic materials, metamaterials, etc. This course gives graduate students an introduction of the recent developments in the research fields of optical materials and nanophotonics. Topics covered include:

Basic concepts on light-matter interactions. Excitons, biexcitons and trions. Polaritons: plasmons, phonons and magnons. Plasmonic materials and their applications. Near field optics and its application in plasmonics. Raman spectroscopy and surface/tip enhanced Raman (SERS/TERS). Metamaterials: negative refraction, super-resolution imaging and optical invisibility.

Optical Materials and Devices: Read More [+]

### Objectives & Outcomes

**Course Objectives:** This course is designed to give graduate students an introduction of the recent developments in the research fields of optical materials and nanophotonics.

### Rules & Requirements

**Prerequisites:** Graduate standing in engineering, physics or chemistry

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Yao

Optical Materials and Devices: Read Less [-]

## MAT SCI 223 Semiconductor Materials 3 Units

Terms offered: Fall 2024, Fall 2022, Fall 2021

Semiconductor purification and crystal growth techniques. Doping, radiation damage, and annealing. Metal-semiconductor interfaces and reactions. Interaction between defects and impurities during processing of devices. Major electronic and optical methods for the analysis of semiconductors.

Semiconductor Materials: Read More [+]

### Rules & Requirements

**Prerequisites:** PHYSICS 7C or consent of instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Dubon, Wu

Semiconductor Materials: Read Less [-]

## MAT SCI 224 Magnetism and Magnetic Materials 3 Units

Terms offered: Fall 2018, Fall 2016, Fall 2014

This course covers the fundamentals of magnetism and magnetic materials in the first two-thirds of the class. Topics include magnetic moments in classical versus quantum mechanical pictures, diamagnetism, paramagnetism, crystal field environments, dipolar and exchange interactions, ferromagnetism, antiferromagnetism, magnetic domains, magnetic anisotropy, and magnetostriction. Magnetic materials covered include transition metals, their alloys and oxides, rare earths and their oxides, organic and molecular magnets. Throughout the course, experimental techniques in magnetic characterization will be discussed. The second part of the course will focus on particular magnetic materials and devices that are of technological interest (e.g., magnetoresistive and magneto-optical materials and devices). Additional topics include biomagnetism and spin glasses.

Magnetism and Magnetic Materials: Read More [+]

### Rules & Requirements

**Prerequisites:** 111 or equivalent or consent of instructor; 117 recommended

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

Magnetism and Magnetic Materials: Read Less [-]

## MAT SCI C225 Thin-Film Science and Technology 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

Thin-film nucleation and growth, microstructural evolution and reactions. Comparison of thin-film deposition techniques. Characterization techniques. Processing of thin films by ion implantation and rapid annealing. Processing-microstructure-property-performance relationships in the context of applications in information storage, ICs, micro-electromechanical systems and optoelectronics.

Thin-Film Science and Technology: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing in engineering, physics, chemistry, or chemical engineering

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Wu, Dubon

**Also listed as:** AST C225

Thin-Film Science and Technology: Read Less [-]

## MAT SCI C226 Photovoltaic Materials; Modern Technologies in the Context of a Growing Renewable Energy Market 3 Units

Terms offered: Fall 2015, Spring 2013, Spring 2011

This technical course focuses on the fundamentals of photovoltaic energy conversion with respect to the physical principals of operation and design of efficient semiconductor solar cell devices. This course aims to equip students with the concepts and analytical skills necessary to assess the utility and viability of various modern photovoltaic technologies in the context of a growing global renewable energy market.

Photovoltaic Materials; Modern Technologies in the Context of a Growing Renewable Energy Market: Read More [+]

### Rules & Requirements

**Prerequisites:** Material Science and Mineral Engineering 111 or 123 or equivalent. Should have a firm foundation in electronic and optical props of semiconductors and basic semiconductor device physics

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Also listed as:** ENE,RES C226

Photovoltaic Materials; Modern Technologies in the Context of a Growing Renewable Energy Market: Read Less [-]

## MAT SCI 228 Additive Fabrication Processes and Systems for Advanced Materials 3 Units

Terms offered: Fall 2023

This course covers engineering principles, system designs, process dynamics and construction of advanced additive manufacturing (AM) techniques. Students will explore the process-structure-property relationships for 3D printing of polymer, metal, ceramic, composites and beyond. The course will introduce 3D topology, cellular and metamaterials enabled by AM. Through course projects, students will create new materials or engineering products using AM processes

### Rules & Requirements

**Prerequisites:** Physics 7A, Engineering 27, Engineering 29, Materials Science and Engineering 45, Mechanical Engineering C85, or instructor's permission

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Zheng

Additive Fabrication Processes and Systems for Advanced Materials: Read Less [-]

## MAT SCI 241 Electron Microscopy Laboratory 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This course covers the basic principles of techniques used in the characterization of engineering materials by electron microscopy, diffraction, and spectroscopy. In addition to lectures on the theory of electron diffraction and microscopy, there is a hands-on laboratory that offers detailed practical training in the operation of the transmission electron microscope (TEM) in all of its major functional diffraction and imaging modes.

Electron Microscopy Laboratory: Read More [+]

### Rules & Requirements

**Prerequisites:** MAT SCI 104

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Gronsky, Minor

Electron Microscopy Laboratory: Read Less [-]

## MAT SCI 242 Advanced Spectroscopy 3 Units

Terms offered: Spring 2023, Spring 2021, Spring 2020

Advanced structural and functional characterization of materials using spectroscopic methods. Techniques to be discussed include state of the art optical, x-ray and ion-beam spectroscopies used for characterization of advanced materials and devices.

Advanced Spectroscopy: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** MAT SCI 204 or MAT SCI 205; 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:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

Advanced Spectroscopy: [Read Less](#) [-]

## MAT SCI 243 Electronic Materials Characterization 3 Units

Terms offered: Spring 2024

This course provides a detailed overview of important characterization techniques used to

study the electrical, optical, magnetic, and piezoelectric properties of thin films, with an emphasis on

semiconductors, for device applications. Key properties that can be extracted from each technique will be

described and compared. Important models to extract key materials characteristics from raw data

collected through ex situ and in situ techniques will also be introduced.

This course emphasizes

characterization techniques commonly available in modern laboratory settings and in industry.

Electronic Materials Characterization: [Read More](#) [+]

### Objectives & Outcomes

**Course Objectives:** To bring students to an appreciation of the power of combining characterization techniques.

To familiarize students with some of the important methods of materials and device characterization

useful in electronic, magnetic, optical and piezoelectric materials research.

To help students acquire the knowledge and hone the thought processes necessary to choose and use

materials characterization techniques wisely.

To help students to become aware of the development of new characterization technologies, how to

find them, and how to judge them.

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Al Balushi

Electronic Materials Characterization: [Read Less](#) [-]

## MAT SCI C250 Nanomaterials in Medicine 3 Units

Terms offered: Fall 2022, Fall 2021, Fall 2020

The course is designed for graduate students interested in the emerging field of nanomedicine. The course will involve lectures, literature reviews and proposal writing. Students will be required to formulate a nanomedicine research project and write an NIH-style proposal during the course. The culmination of this project will involve a mock review panel in which students will serve as peer reviewers to read and evaluate the proposals.

Nanomaterials in Medicine: Read More [+]

### Objectives & Outcomes

**Course Objectives:** To review the current literature regarding the use of nanomaterials in medical applications; (2) To describe approaches to nanomaterial synthesis and surface modification; (3) To understand the interaction of nanomaterials with proteins, cells and biological systems; (4) To familiarize students with proposal writing and scientific peer review.

**Student Learning Outcomes:** Students should be able to (1) identify the important properties of metal, polymer and ceramic nanomaterials used in healthcare; (2) understand the role of size, shape and surface chemistry of nanomaterials in influencing biological fate and performance; (3) understand common methods employed for surface modification of nanomaterials; (4) comprehend the range of cell-nanomaterial interactions and methods for assaying these interactions; (5) read and critically review the scientific literature relating to nanomedicine; (6) formulate and design an experimental nanomedicine research project; (7) understand the principles of the peer review system.

### Rules & Requirements

**Prerequisites:** Graduate Standing

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Messersmith

**Also listed as:** BIO ENG C250

Nanomaterials in Medicine: Read Less [-]

## MAT SCI 251 Polymer Surfaces and Interfaces 3 Units

Terms offered: Spring 2024, Spring 2022, Fall 2020

The course is designed for graduate students to gain a fundamental understanding of the surface and interfacial science of polymeric materials. Beginning with a brief introduction of the principles governing polymer phase behavior in bulk, it develops the thermodynamics of polymers in thin films and at interfaces, the characterization techniques to assess polymer behavior in thin films and at interfaces, and the morphologies of polymer thin films and other dimensionally-restricted structures relevant to nanotechnology and biotechnology. Field trips to national user facilities, laboratory demonstrations and hands-on experiments, and guest lectures will augment the courses lectures. Polymer Surfaces and Interfaces: Read More [+]

### Rules & Requirements

**Prerequisites:** Chemistry 1A or Engineering 5; Material Science and Engineering 151 recommended

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Xu

Polymer Surfaces and Interfaces: Read Less [-]

## MAT SCI 260 Surface Properties of Materials 3 Units

Terms offered: Fall 2024, Spring 2023, Fall 2020

Thermodynamics of surfaces and phase boundaries, surface tension of solids and liquids, surface activity, adsorption, phase equilibria, and contact angles, electrochemical double layers at interfaces, theory, and applications.

Surface Properties of Materials: Read More [+]

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Salmeron

**Formerly known as:** Mineral Engineering 260

Surface Properties of Materials: Read Less [-]



## **MAT SCI C261 Introduction to Nano-Science and Engineering 3 Units**

Terms offered: Spring 2015, Spring 2013, Spring 2012

A three-module introduction to the fundamental topics of Nano-Science and Engineering (NSE) theory and research within chemistry, physics, biology, and engineering. This course includes quantum and solid-state physics; chemical synthesis, growth fabrication, and characterization techniques; structures and properties of semiconductors, polymer, and biomedical materials on nanoscales; and devices based on nanostructures. Students must take this course to satisfy the NSE Designated Emphasis core requirement.

Introduction to Nano-Science and Engineering: Read More [+]

### **Rules & Requirements**

**Prerequisites:** Major in physical science such as chemistry, physics, etc., or engineering; consent of advisor or instructor

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

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructors:** Gronsky, S.W. Lee, Wu

**Also listed as:** BIO ENG C280/NSE C201/PHYSICS C201

Introduction to Nano-Science and Engineering: Read Less [-]

## **MAT SCI C286 Modeling and Simulation of Advanced Manufacturing Processes 3 Units**

Terms offered: Fall 2024, Spring 2024, Spring 2023

This course provides the student with a modern introduction to the basic industrial practices, modeling techniques, theoretical background, and computational methods to treat classical and cutting edge manufacturing processes in a coherent and self-consistent manner.

Modeling and Simulation of Advanced Manufacturing Processes: Read More [+]

### **Objectives & Outcomes**

**Course Objectives:** An introduction to modeling and simulation of modern manufacturing processes.

### **Rules & Requirements**

**Prerequisites:** An undergraduate course in strength of materials or 122

### **Hours & Format**

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

### **Additional Details**

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Zohdi

**Also listed as:** MEC ENG C201/NUC ENG C226

Modeling and Simulation of Advanced Manufacturing Processes: Read Less [-]

## MAT SCI C287 Computational Design of Multifunctional/Multiphysical Composite Materials 3 Units

Terms offered: Spring 2012

The course is self-contained and is designed in an interdisciplinary manner for graduate students in engineering, materials science, physics, and applied mathematics who are interested in methods to accelerate the laboratory analysis and design of new materials. Examples draw primarily from various mechanical, thermal, diffusive, and electromagnetic applications.

Computational Design of Multifunctional/Multiphysical Composite

Materials: Read More [+]

### Rules & Requirements

**Prerequisites:** An undergraduate degree in the applied sciences or engineering

### Hours & Format

**Fall and/or spring:** 15 weeks - 3-3 hours of lecture and 0-1 hours of discussion per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Zohdi

**Also listed as:** MEC ENG C202

Computational Design of Multifunctional/Multiphysical Composite

Materials: Read Less [-]

## MAT SCI 290A Special Topics in Materials Science 3 Units

Terms offered: Fall 2016, Fall 2015, Fall 2014

Lectures and appropriate assignments on fundamental or applied topics of current interest in materials science and engineering.

Special Topics in Materials Science: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing

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

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Formerly known as:** 290M

Special Topics in Materials Science: Read Less [-]

## MAT SCI 290M Special Problems in Materials Science 3 Units

Terms offered: Spring 2009, Spring 2008, Spring 2006

Selected topics in the thermodynamic, kinetic or phase transformation behavior of solid materials. Topics will generally be selected based on student interest in Mat Sci 201A-201B. The course provides an opportunity to explore subjects of particular interest in greater depth.

Special Problems in Materials Science: Read More [+]

### Rules & Requirements

**Prerequisites:** MAT SCI 201A and MAT SCI 201B; or consent of instructor

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

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Letter grade.

**Instructor:** Morris

Special Problems in Materials Science: Read Less [-]

## MAT SCI 296A Independent Research for Five-Year BS/MS Program 1 - 2 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This is the first semester of a two-course sequence for those majors in the five year BS/MS program. Students are expected to formulate, develop and initiate an independent research project under the supervision of a research advisor. This course will meet once at the beginning of the semester to outline the expectations of the course. Periodic meetings covering topics such as maintaining a lab notebook, effective oral communication, and writing a journal publication will be scheduled. Students will be expected to keep a laboratory notebook outlining their progress during the semester. A progress report will be due at the end of Materials Science and Engineering 296A. Students will also be expected to give an oral presentation, describing their research project and progress toward their goals in front of their peers at the end of the semester.

Independent Research for Five-Year BS/MS Program: Read More [+]

### Rules & Requirements

**Prerequisites:** Acceptance into the five year BS/MS program

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-2 hours of independent study per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Offered for satisfactory/unsatisfactory grade only.

Independent Research for Five-Year BS/MS Program: Read Less [-]

## MAT SCI 296B Independent Research for Five-Year BS/MS Program 1 - 2 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This is the second semester of a two-course sequence for those majors in the five year BS/MS program. Students are expected to complete an independent research project under the supervision of a research advisor initiated in Materials Science and Engineering 296A. This course will meet once at the beginning of the semester to outline the expectations of the course. Periodic meetings covering topics such as data analysis and design of experiment will be scheduled. Students will be expected to keep a laboratory notebook outlining their progress during the semester. A final report in journal publication form will be due at the end of the semester. Each student will also give a final presentation on his/her research project at the end of the semester.

Independent Research for Five-Year BS/MS Program: Read More [+]

### Rules & Requirements

**Prerequisites:** 296A

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-2 hours of independent study per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Offered for satisfactory/unsatisfactory grade only.

Independent Research for Five-Year BS/MS Program: Read Less [-]

## MAT SCI 298 Group Studies, Seminars, or Group Research 1 - 8 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023

Advanced study in various subjects through special seminars on topics to be selected each year, informal group studies of special problems, group participation in comprehensive design problems or group research on complete problems for analysis and experimentation.

Group Studies, Seminars, or Group Research: Read More [+]

### Rules & Requirements

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

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-8 hours of seminar per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Offered for satisfactory/unsatisfactory grade only.

Group Studies, Seminars, or Group Research: Read Less [-]

## MAT SCI 299 Individual Study or Research 1 - 12 Units

Terms offered: Fall 2024, Summer 2024, Summer 2024 10 Week Session

Individual investigation of advanced materials science problems.

Individual Study or Research: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing in engineering

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

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-12 hours of independent study per week

### Summer:

6 weeks - 1-12 hours of independent study per week

8 weeks - 1-12 hours of independent study per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate

**Grading:** Offered for satisfactory/unsatisfactory grade only.

Individual Study or Research: Read Less [-]

## MAT SCI 375A Science and Engineering Pedagogy 2 Units

Terms offered: Fall 2016, Fall 2015, Fall 2014

Discussion and research of pedagogical issues. Supervised practice teaching in materials science and engineering.

Science and Engineering Pedagogy: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing and appointment, or interest in appointment, as a graduate student instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Professional course for teachers or prospective teachers

**Grading:** Offered for satisfactory/unsatisfactory grade only.

**Instructor:** Gronsky

**Formerly known as:** Material Science and Engineering 300

Science and Engineering Pedagogy: Read Less [-]

## MAT SCI 375B Supervised Teaching of Materials Science and Engineering 1 Unit

Terms offered: Prior to 2007

Discussion and research of pedagogical issues. Supervised practice teaching in Materials and Science and Engineering.

Supervised Teaching of Materials Science and Engineering: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing and appointment, or interest in appointment, as a graduate student instructor

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Professional course for teachers or prospective teachers

**Grading:** Offered for satisfactory/unsatisfactory grade only.

**Formerly known as:** Material Science and Engineering 300

Supervised Teaching of Materials Science and Engineering: Read Less [-]

## MAT SCI 601 Individual Study for Master's Students 1 - 8 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

Individual study for the comprehensive or language requirements in consultation with the field adviser.

Individual Study for Master's Students: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing in engineering

**Credit Restrictions:** Course does not satisfy unit or residence requirements for master's degree.

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

### Hours & Format

**Fall and/or spring:** 15 weeks - 1-8 hours of independent study per week

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate examination preparation

**Grading:** Offered for satisfactory/unsatisfactory grade only.

Individual Study for Master's Students: Read Less [-]

## MAT SCI 602 Individual Study for Doctoral Students 1 - 8 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

Individual study in consultation with the major field adviser, intended to provide an opportunity for qualified students to prepare themselves for the various examinations required of candidates for the Ph.D. (and other doctoral degrees).

Individual Study for Doctoral Students: Read More [+]

### Rules & Requirements

**Prerequisites:** Graduate standing in engineering

**Credit Restrictions:** Course does not satisfy unit or residence requirements for doctoral degree.

**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

### Additional Details

**Subject/Course Level:** Materials Science and Engineering/Graduate examination preparation

**Grading:** Offered for satisfactory/unsatisfactory grade only.

Individual Study for Doctoral Students: Read Less [-]

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

## UGBA C5 Introduction to Entrepreneurship 2 Units

Terms offered: Fall 2022, Fall 2021, Fall 2020

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 2024, Spring 2024, Fall 2023

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 10X Foundations of Business 4 Units

Terms offered: Not yet offered

This course is a reimagining of UGBA 10 as an interactive foundational leadership course. It provides an introduction to the fundamental Haas Defining Leadership Principles (Question the Status Quo, Confidence Without Attitude, Students Always, and Beyond Yourself), as well as an in-depth exploration of business fundamentals, teamwork, and critical thinking. In addition to introducing students to contemporary business topics, their historical and conceptual foundations, and their social and psychological sources and effects, this course also serves as a “sandbox” for the active application of this knowledge.

Foundations of Business: Read More [+]

### Hours & Format

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

### Additional Details

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

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

Foundations of Business: Read Less [-]

## UGBA C12 The Berkeley Changemaker 2 - 3 Units

Terms offered: Fall 2024, Summer 2024 Second 6 Week Session, Spring 2024, Fall 2023

Berkeley Changemaker impact occurs across many fronts: scientific, artistic, social, and entrepreneurial. This course helps students identify as a Berkeley Changemaker and learn the critical thinking, communication, and collaboration skills to become one. Combining disciplines across UC Berkeley, the course also helps launch the Berkeley Discovery arc. Students develop their own leadership styles and discover how they can create and lead diverse teams to act upon the world. Values in Berkeley's DNA like Questioning the Status Quo and going Beyond Yourself support students in leading from whatever position they occupy, preparing them to leave their mark on campus, in their communities, or beyond. More at: <http://changemaker.berkeley.edu>.

The Berkeley Changemaker: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 2-2 hours of lecture and 0-1.5 hours of discussion per week

### Summer:

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

8 weeks - 4-4 hours of lecture and 0-3 hours of discussion 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.

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

The Berkeley Changemaker: Read Less [-]

## UGBA 13 Berkeley Changemaker: Human Health 2 Units

Terms offered: Spring 2024, Fall 2022

Do you wonder how you might play a part in changing human health and improving the lives of others? Find your path with Berkeley Changemaker: Human Health. In this course you will apply the core principles of the Berkeley Changemaker curriculum by Critically exploring a full understanding of an important human health issue, Collaborating with diverse colleagues on a project team to investigate solutions using gold-standard discovery techniques, and Communicating what you've learned and providing thoughtful feedback to your classmates. Each week you will also research and then have a curated conversation with a changemaking expert on a range of human health topics, from startup solutions, to healthcare economics, to health equity issues.

Berkeley Changemaker: Human Health: 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. Alternate method of final assessment during regularly scheduled final exam group (e.g., presentation, final project, etc.).

Berkeley Changemaker: Human Health: Read Less [-]

## UGBA 24 Freshman Seminars 1 Unit

Terms offered: Spring 2024, Spring 2023, Spring 2022

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 2024, Fall 2023, Fall 2022

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 2024, Spring 2024, Fall 2023

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 78G Developing Global Leadership Expertise 2 Units

Terms offered: Prior to 2007

This course is required for all freshmen in the Global Management Program at the Haas School of Business and limited to those students as well. The objective of this course is to provide students with an introduction to the type of leadership skills required to be a successful cross-cultural leader in today's increasingly complex global marketplace. The goal is for each student to begin developing a personalized global leadership "toolkit" that will continue to evolve over the next few years in the Global Management Program and ultimately as a business decision-maker with fiduciary responsibilities.

Developing Global Leadership Expertise: 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. Alternate method of final assessment during regularly scheduled final exam group (e.g., presentation, final project, etc.).

Developing Global Leadership Expertise: Read Less [-]

## UGBA 84 Sophomore Seminar 1 or 2 Units

Terms offered: Not yet offered

Sophomore seminars are small interactive courses offered by faculty members in departments all across the campus. Sophomore seminars offer opportunity for close, regular intellectual contact between faculty members and students in the crucial second year. The topics vary from department to department and semester to semester. Enrollment limited to 15 sophomores.

Sophomore Seminar: Read More [+]

### Rules & Requirements

**Prerequisites:** At discretion of instructor

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

### Hours & Format

#### Fall and/or spring:

5 weeks - 3-6 hours of seminar per week

10 weeks - 1.5-3 hours of seminar per week

15 weeks - 1-2 hours of seminar per week

#### Summer:

6 weeks - 2.5-5 hours of seminar per week

8 weeks - 1.5-3.5 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.

Sophomore Seminar: Read Less [-]

## UGBA 88 Data and Decisions 2 Units

Terms offered: Fall 2024, Summer 2024 8 Week Session, Spring 2024

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 gleaning 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

**Summer:** 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.

**Instructor:** Miller

Data and Decisions: Read Less [-]

## UGBA C95B Introduction to the Biotechnology Field and Industry 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: 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

**Formerly known as:** Molecular and Cell Biology C95B/Undergrad.  
Business Administration C95B

**Also listed as:** MCELLBI C75

Introduction to the Biotechnology Field and Industry: Read Less [-]

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

Terms offered: Fall 2024, Summer 2024 Second 6 Week Session, Fall 2023

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 2024, Spring 2024, Fall 2023

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 2024, Summer 2024 Second 6 Week Session, Spring 2024

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 2024, Summer 2024 First 6 Week Session, Spring 2024

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 required, with common exam group.

**Formerly known as:** Business Administration 111

Macroeconomic Analysis for Business Decisions: Read Less [-]

## UGBA 102A Financial Accounting 3 Units

Terms offered: Fall 2024, Summer 2024 First 6 Week Session, Spring 2024

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 2024, Summer 2024 First 6 Week Session, Summer 2024 Second 6 Week Session

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 103 Introduction to Finance 4 Units

Terms offered: Fall 2024, Summer 2024 First 6 Week Session, Summer 2024 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 2024, Summer 2024 First 6 Week Session, Spring 2024

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 - 2.5-7.5 hours of lecture and 2.5-0 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 2024, Summer 2024 First 6 Week Session, Spring 2024

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 2024, Summer 2024 First 6 Week Session, Summer 2024 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 2024, Summer 2024 First 6 Week Session, Spring 2024

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 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 2024, Fall 2023, Fall 2022

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 120AA Intermediate Financial Accounting 1 4 Units

Terms offered: Fall 2024, Summer 2024 Second 6 Week Session, Fall 2023

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: Summer 2024 First 6 Week Session, Spring 2024, Summer 2023 First 6 Week Session

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 2024, Summer 2024 Second 6 Week Session, Spring 2024

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: Summer 2024 Second 6 Week Session, Spring 2024, Summer 2023 Second 6 Week Session

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 2024, Summer 2024 First 6 Week Session, Summer 2024 Second 6 Week Session

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 2024, Fall 2023, Fall 2022

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 2024, Fall 2023, Fall 2022

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: Fall 2024, Summer 2024 First 6 Week Session, Spring 2024

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 2023, Spring 2022, Spring 2021

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 2024, Spring 2023, Spring 2022

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 2024, Summer 2024 Second 6 Week Session, Spring 2024

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 2024, Spring 2023, Spring 2022

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 2024, Summer 2024 First 6 Week Session, Fall 2023  
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 2024, Spring 2024, Fall 2023  
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 2024 Second 6 Week Session, Summer 2023 Second 6 Week Session, Summer 2022 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 2024, Summer 2024 Second 6 Week Session, Fall 2023

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: Fall 2024, Fall 2022, Spring 2022

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 142 Advanced Business Analytics 3 Units

Terms offered: Spring 2024

Successful business analysts, managers, and executives are increasingly required to make data-driven decisions to run their businesses, rather than rely on experience and intuition alone. This course teaches the latest data analytic methods and decision methods now used by leading-edge business practitioners, going deep to understand their technical inner workings and going broad to realize their practical business applications. Topics include: data analysis/business decision methodology; data analytic methods, including machine learning and other approaches; introduction to R software for data analysis; real-world/real-data business practicum across a variety of industries.

Advanced Business Analytics: Read More [+]

### Rules & Requirements

**Prerequisites:** Undergraduate Business Administration 104, Data Science C100, or equivalent

### 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.

Advanced Business Analytics: 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 2024 First 6 Week Session, Summer 2023 First 6 Week Session, Summer 2022 First 6 Week Session

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 2023 First 6 Week Session, Summer 2022 First 6 Week Session, Spring 2022

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 150 Leading High Impact Teams 3 Units

Terms offered: Fall 2024, Spring 2024, Spring 2023

This course helps students hone and develop the leadership skills needed to lead dynamic, complex, global teams. Globalization, rapid technological change, and a shift towards an innovation-based economy have resulted in more dynamic, distributed, cross-functional, as well as demographically and culturally diverse teams. Students will learn to create team developmental plans and accountability, coach teams through challenges, encourage teams to recognize and avoid bias and misattributions, and lead from a distance and across boundaries.

Leading High Impact Teams: [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. Alternate method of final assessment during regularly scheduled final exam group (e.g., presentation, final project, etc.).

Leading High Impact Teams: [Read Less](#) [-]

## UGBA 151 Management of Human Resources 3 Units

Terms offered: Spring 2022, Spring 2021, Spring 2020

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 151A People Analytics 2 Units

Terms offered: Prior to 2007

This course focuses on measuring and analyzing the costs and benefits of human capital investments by providing students with the ability to develop, analyze and use information to assess and measure employee and organizational performance. The course will show participants how to develop and make critical recommendations on such information to senior management, as well as helping to increase their presence and credibility with key decision makers. On successful completion, students will have the skills necessary to formulate both qualitative and quantitative recommendations for key management decisions affecting employees.

People Analytics: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:** 8 weeks - 4 hours of lecture per week

### Additional Details

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

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

People Analytics: [Read Less](#) [-]

## UGBA 152 Negotiation and Conflict Resolution 3 Units

Terms offered: Fall 2024, Summer 2024 First 6 Week Session, Summer 2024 Second 6 Week Session

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: Summer 2024 Second 6 Week Session, Fall 2023, Summer 2023 Second 6 Week Session

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 - 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.

Power and Politics in Organizations: [Read Less](#) [-]

## UGBA 155 Leadership 3 Units

Terms offered: Summer 2023 First 6 Week Session, Summer 2022 First 6 Week Session, Summer 2021 First 6 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: [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 2023 10 Week Session, Summer 2022 10 Week Session, Summer 2021 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 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 156 Berkeley Changemaker: Living with Agency 2 Units

Terms offered: Spring 2024

What does it mean to “live with agency”? This course emphasizes the Berkeley Changemaker pillars of critical thinking, effective communication, and productive collaboration. You will combine critical examination of evidence-based, multi-disciplinary research and theories with personal self-reflection. These are interwoven with implementable strategies, directly applicable to the business context, to help you develop a sharper sense of who you want to be along with tools to make that happen. Frequent guest speakers, simulations, and discussions allow you to learn from others as you expand your network. L&S/UGBA C12/ C196C is not a prerequisite but is highly recommended since this course complements and builds on that class.

Berkeley Changemaker: Living with Agency: [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. Alternate method of final assessment during regularly scheduled final exam group (e.g., presentation, final project, etc.).

Berkeley Changemaker: Living with Agency: [Read Less](#) [-]

## UGBA 157 Special Topics in the Management of Organizations 1 - 4 Units

Terms offered: Spring 2024, Fall 2023, Spring 2023

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 159 Becoming a Changemaker 2 Units

Terms offered: Spring 2024, Fall 2023, Spring 2023

This course inspires, trains and equips participants to convert raw energy and enthusiasm for creating a better world into real leadership skills and mindsets which will empower you to create positive change at an individual, organizational and societal level. Anchored in change leadership and bringing together the fields of entrepreneurship, innovation, leadership & social impact, the course is focused on moving from ideas to action; gaining inspiration from diverse changemakers across roles and sectors; learning how to navigate, shape and lead change to thrive amidst uncertainty; and helping you become the kind of leader our companies, our communities and our world need right now.

Becoming a Changemaker: 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.

Becoming a Changemaker: Read Less [-]

## UGBA 160 Customer Insights 3 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023

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: Summer 2024 Second 6 Week Session, Spring 2022, Fall 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 2022, Fall 2021, Fall 2020

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 2022 First 6 Week Session, Summer 2021 First 6 Week Session, Summer 2020 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 2024, Spring 2023, Spring 2022

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 168B International Marketing 3 Units

Terms offered: Spring 2015, Spring 2014

Provides frameworks, knowledge, and sensitivities to formulate and implement marketing strategies for competing in the international arena. Regions and countries covered include the Americas, Europe, Japan, China, India, Russia, Africa, and Asia-Pacific. Issues covered include global versus local advertising, international pricing strategies, selecting and managing strategic international alliances and distribution channels, managing international brands and product lines through product life cycle, international retailing, and international marketing organization and control.

International Marketing: Read More [+]

### 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:** Undergrad. Business Administration/  
Undergraduate

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

International Marketing: Read Less [-]

## UGBA 169 Pricing 3 Units

Terms offered: Fall 2024, Summer 2024 Second 6 Week Session, Spring 2024

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 171 Tech and the City: How to Get Urban Innovation Right 3 Units

Terms offered: Spring 2024, Spring 2022

This course critically examines how new technologies and business models impact cities, and identifies the approaches that produce not only the best business outcomes, but also the most equitable and sustainable outcomes. To begin, we explore what makes cities such compelling laboratories for technology innovation, learn from past attempts at “smart city” interventions, and discuss how technologists can identify more effective solutions to today’s urban challenges. We’ll then hear from a variety of cutting edge practitioners, including venture investors, startup founders, government officials, tech journalists and community organizers about the unique opportunities and challenges of building an urban tech startup today.

Tech and the City: How to Get Urban Innovation Right: 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. Alternative to final exam.

Tech and the City: How to Get Urban Innovation Right: Read Less [-]

## UGBA C172 History of American Business 3 Units

Terms offered: Spring 2022, Spring 2021, Spring 2019

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 173 Competitive Strategy 2 Units

Terms offered: Fall 2024, Summer 2024, Spring 2024

This course takes the perspective of the executive responsible for developing a firm's strategy, and focuses on forms of competitive advantage at the firm level. Topics include industry and competitive analysis; business scope (horizontal and vertical scope); make vs buy decision-making and related tradeoffs; network effects and complementors; disruption and response; non-market factors such as regulatory barriers to entry; and risks to sustaining returns. This course will build on concepts covered in various UGBA Core classes.

Competitive Strategy: Read More [+]

### Rules & Requirements

**Prerequisites:** 101A or equivalent

### Hours & Format

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

### Summer:

3 weeks - 10 hours of lecture per week

6 weeks - 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.

**Instructor:** Metzler

**Formerly known as:** Undergrad. Business Administration 115

Competitive Strategy: Read Less [-]

## UGBA 174 Leading Strategy Implementation 3 Units

Terms offered: Spring 2024, Spring 2023, Fall 2021

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 [+]

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for UGBA 174 after completing BUS ADM 190.

### 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:** Undergrad. Business Administration 119

Leading Strategy Implementation: Read Less [-]

## UGBA 175 Legal Aspects of Management 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

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 2024, Fall 2023, Fall 2022

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 2024, Fall 2023, Fall 2022

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 2024, Summer 2024 Second 6 Week Session,  
Summer 2023 Second 6 Week Session

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 2024, Fall 2022, Fall 2021

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 179G GMP Capstone: International Team Project 3 Units

Terms offered: Prior to 2007

This course is required for all juniors in the Global Management Program at the Haas School of Business and limited to those students as well.

This is an experiential learning course where students will work on a live project with a company, covering both the revenue and cost sides of the business model. The course will provide students insider access to company executives and information while also giving them the opportunity to contribute meaningfully to the company's bottom-line performance. In the process, students will acquire skills and knowledge across the following three key categories: Cross-Cultural Competence, International Sales & Marketing, International Finance & Supply Chain Management.

GMP Capstone: International Team Project: [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. Alternative to final exam.

GMP Capstone: International Team Project: [Read Less](#) [-]

## UGBA 180 Introduction to Real Estate and Urban Land Economics 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

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 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 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 2024, Spring 2016, Spring 2015

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 2022, 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 2024, Spring 2022, Fall 2021

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: Prior to 2007

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: Fall 2024, Spring 2024, Fall 2023

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 2024, Fall 2023, Fall 2022

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 - 3 Units

Terms offered: Fall 2024, Spring 2024, Spring 2020

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:** 15 weeks - 1-3 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: Fall 2024, Spring 2024, Fall 2023

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 - 1.5 hours of lecture and 1.5 hours of laboratory per week

**Summer:** 6 weeks - 4 hours of lecture and 4 hours of laboratory 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: Fall 2024, Fall 2023, Spring 2022

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 2024, Spring 2023, Spring 2022

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 2024, Fall 2023, Fall 2022

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 192F Edible Education 3 Units

Terms offered: Prior to 2007

This course is a lecture series that explores the food system and its critical role in our culture, well-being and survival. Students will develop food-systems intelligence—a personal understanding of how the diverse facets of the food system relate to one another, especially one's own role as a participant in the food system and how individual and collective choices, actions, policies and public and private interests affect it. The course explores personal ethics, complex systems, entrepreneurial agency, and ways to develop a multi-sector perspective to food-systems change making. Students will develop plans at an individual, local, national, or global scale to improve, and possibly transform our food system.

Edible Education: [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. Alternative to final exam.

Edible Education: [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: Spring 2023, Spring 2021

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 192ID Impact Startup Disco 1 Unit

Terms offered: Spring 2024, Spring 2023, Spring 2022

This is a high-octane, single weekend course (plus one intro day) for students interested in meeting other innovators and getting hands-on experience developing a new impact startup concept. All "social and environmental" impact themes are welcome. The course is inspired by other "hackathon" and startup weekend formats. A structured roadmap helps guide students through a sprint formation and ideation process. All students will be asked to submit an idea during the week prior to the class. After a peer vote selects the top ideas, teams are organically formed during the first session. At the end of the course, each team will present their validated concept and their next steps plan to a panel of impact venture experts.

Impact Startup Disco: [Read More](#) [+]

### Hours & Format

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

### Additional Details

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

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

Impact Startup Disco: [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 192MC Management Consulting Skills for Social Impact 2 Units

Terms offered: Spring 2024, Spring 2023, Fall 2021

This course provides a basic understanding of what consultants do and how they do it, and how consulting skills can be applied to thorny problems of social impact. Students will: 1) gain a broad understanding of the management consulting industry, the various consulting models, and how consultants can generate value for their clients in the social sector; 2) learn and practice structured approaches to problem solving used by leading management consultancies; and 3) understand other skills required in management consulting for social impact – such as communicating persuasively and managing projects and client relationships – as well as some of the ethical issues that consultants often face working in the social sector.

Management Consulting Skills for Social Impact: [Read More](#) [+]

### Hours & Format

**Fall and/or spring:**

12 weeks - 2.5 hours of lecture per week

15 weeks - 2 hours of lecture per week

### Additional Details

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

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

Management Consulting Skills for Social Impact: [Read Less](#) [-]

## UGBA 192N Topics in Social Sector Leadership 1 - 5 Units

Terms offered: Spring 2022, Fall 2019, Spring 2019

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 2024, Fall 2023, Fall 2021

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 192PF Plant Futures: Introduction to Plant-Centric Food Systems 3 Units

Terms offered: Fall 2024

Available to students across all UCs, Plant Futures: Introduction to Plant-Centric Food Systems fosters interdisciplinary connection while providing a systems-view exploration of both the challenges and emergent solutions and opportunities within our current food system. Through a mix of synchronous and asynchronous modular content, covering Climate & Environment, Health & Nutrition, Animal Welfare, Social Impacts, Innovation, Policy & Law, Behavioral Change, Media, and Plant-Forward Cooking, you'll engage with esteemed experts, express your unique perspective through written assignments and guided discussions, and apply your learnings and ideas by working with your peers on innovative projects aimed at advancing plant-centric food systems.

Plant Futures: Introduction to Plant-Centric Food Systems: 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. Alternative to final exam.

Plant Futures: Introduction to Plant-Centric Food Systems: Read Less [ - ]

## UGBA 192S Business and Sustainability 2 Units

Terms offered: Summer 2024 First 6 Week Session, Summer 2023 First 6 Week Session, Summer 2022 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 Responsible Business 1 - 4 Units

Terms offered: Fall 2024, Summer 2024 Second 6 Week Session, Spring 2024

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 Responsible Business: 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 - 2-8 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 Responsible Business: Read Less [ - ]

## UGBA C192R Business, Sustainability, and Society 3 Units

Terms offered: Summer 2024 Second 6 Week Session, Summer 2022 8 Week Session, Summer 2021 8 Week Session

As corporations have grown in influence, concerns over their impact on people and the planet have also grown, pushing sustainability, corporate social responsibility, and the wider impact of business into the spotlight. This course focuses on business ethics, supply chains, resource constraints, labor issues, innovation, and environmental externalities, as well as the internal challenges, competitive pressures, external stakeholders, and other issues that businesses must consider while trying to act responsibly.

Business, Sustainability, and Society: Read More [ + ]

### Hours & Format

### 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, with common exam group.

**Instructor:** Rochlin

**Also listed as:** ENE, RES C192

Business, Sustainability, and Society: Read Less [ - ]



## UGBA 193B Energy & Civilization 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

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 will receive no credit for UGBA 193B after completing L & S 126. A deficient grade in UGBA 193B may be removed by taking 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 Practical Training 0.5 Units

Terms offered: Summer 2014 10 Week Session, Summer 2013 10 Week Session, Summer 2012 10 Week Session

A structured reflective experience on the applied aspects of Business Administration in a professional off-campus environment. The self-selected experience from a CPT employer is designed to provide students with opportunities to make connections between the theory and practice of academic study and the practical application of that study in a real world setting. This applied course is intended for students to enhance their academics through their experience with the experiential learning activity of their choice.

Practical Training: Read More [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction. Students may enroll in multiple sections of this course within the same semester.

### 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. Alternative to final exam.

Practical Training: 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 2024, Spring 2023, Spring 2022

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 194S Sports Management 2 Units

Terms offered: Summer 2024 Second 6 Week Session

This course focuses on key issues and influencers within the sports industry, with an emphasis on college athletics. Subjects research, review and discuss topics in law, marketing, finance, and management; issues range from pending NCAA lawsuits, naming rights, conference television agreements, multi-media rights, and athletic facility financing, to coaching and player / student-athlete experiences. Students have the opportunity to engage with sports industry professionals and guest speakers on a variety of present day issues.

Sports 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. Alternative to final exam.

Sports Management: [Read Less](#) [-]

## UGBA 195A Entrepreneurship 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2020

Whether you have an idea for a business right now, are interested in being an entrepreneur in the future, or want to build entrepreneurial skills to be an innovator at an established company, this course will cover the topics you need to know to succeed. The course takes students through the entire new venture process including how to: evaluate new business ideas, get customers to buy your product, validate that your business is scalable and profitable, pitch to investors/raise capital, scale and exit a business, and beyond. Through a group project, students create their own venture and learn by doing what entrepreneurs actually do. Each week students also get insights from successful entrepreneur/investor guest speakers.

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: Fall 2021

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 2024, Fall 2023, Fall 2022

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 2024, Spring 2023, Spring 2022

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 C195C Life Sciences, Business, and Entrepreneurship Capstone Course 4 Units

Terms offered: Prior to 2007

Blended lecture / Project-based course where student teams build out a business plan for a mock biotech company, demonstrating advanced knowledge in therapeutics and business development. Throughout the course student teams will work toward a final project in which they will identify and present a technology overview, disease overview and explanation of unmet need, a development plan, a commercialization plan, risk mitigation strategy, and financials. Class will include field trips, guest lectures, and a pitch competition with prize.

Life Sciences, Business, and Entrepreneurship Capstone Course: Read More [+]

### Rules & Requirements

**Prerequisites:** Students must be in their fourth and final year of the Life Sciences, Business, and Entrepreneurship Program in order to enroll in this class

### Hours & Format

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

### Additional Details

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

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

**Instructors:** Schaletzky, Dillin

**Also listed as:** MCELLBI C175

Life Sciences, Business, and Entrepreneurship Capstone Course: Read Less [-]

## UGBA 196 Special Topics in Business Administration 1 - 4 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023

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 196SA Business Models for Sustainability 3 Units

Terms offered: Summer 2024 First 6 Week Session, Summer 2023 First 6 Week Session, Summer 2022 First 6 Week Session

This course explores the ways in which business, social and environmental sustainability are intertwined. The course maps how business can play a definitive role in addressing the problems of sustainability, primarily with regard to climate change. The course examines a range of approaches to developing business models in the context of sustainability, the actions that business can take to improve environmental outlook, and the emergence of a sustainability-aware economy.

Business Models for Sustainability: [Read More](#) [+]

### Hours & Format

**Summer:** 6 weeks - 6 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 Models for Sustainability: [Read Less](#) [-]

## UGBA 196SB Innovation and Entrepreneurship for Sustainability 3 Units

Terms offered: Summer 2024 First 6 Week Session, Summer 2023 First 6 Week Session, Summer 2022 First 6 Week Session

This course is an optimistic take on the daunting issues of environmental and social sustainability, primarily through the lens of innovation and entrepreneurship, and maps how new business creation can play a definitive role in addressing the social and environmental problems of sustainability. In terms of balance, the course starts with a primer on the fundamentals of innovation and entrepreneurship (the first 20% of the course) before moving on to the core topic of sustainability entrepreneurship (80% of the course).

Innovation and Entrepreneurship for Sustainability: [Read More](#) [+]

### Hours & Format

**Summer:** 6 weeks - 6 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 Entrepreneurship for Sustainability: [Read Less](#) [-]

## UGBA 196SC Investing for Sustainability 3 Units

Terms offered: Summer 2024 First 6 Week Session, Summer 2023 Second 6 Week Session, Summer 2022 Second 6 Week Session

This course examines how capital markets and the investment industry are responding to the growth in social and environmental sustainability, both as a financial risk to investment opportunities and increased public awareness in the role of financial markets and investment in social and environmental issues. The course includes 1) an introduction to capital markets including institutional investment, public finance and private capital, and 2) an examination of the rise of sustainability-related investing including environmental, social and governance investing, mission-related investment, venture capital impact investing, blended finance and shareholder activism on issues ranging from climate change to diversity, equity and inclusion.

Investing for Sustainability: [Read More](#) [+]

### Hours & Format

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

### Additional Details

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

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

Investing for Sustainability: [Read Less](#) [-]

## UGBA C196C The Berkeley Changemaker 2 - 3 Units

Terms offered: Fall 2024, Summer 2024 Second 6 Week Session, Spring 2024, Fall 2023, Summer 2023 Second 6 Week Session

Berkeley Changemaker impact occurs across many fronts: scientific, artistic, social, and entrepreneurial. This course helps students identify as a Berkeley Changemaker and learn the critical thinking, communication, and collaboration skills to become one. Combining disciplines across UC Berkeley, the course also helps launch the Berkeley Discovery arc. Students develop their own leadership styles and discover how they can create and lead diverse teams to act upon the world. Values in Berkeley's DNA like Questioning the Status Quo and going Beyond Yourself support students in leading from whatever position they occupy, preparing them to leave their mark on campus, in their communities, or beyond. More at: <http://changemaker.berkeley.edu>.

The Berkeley Changemaker: Read More [+]

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for UGBA C196C after completing UGBA C12. A deficient grade in UGBA C196C may be removed by taking UGBA C12.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2-2 hours of lecture and 0-1.5 hours of discussion per week

### Summer:

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

8 weeks - 4-4 hours of lecture and 0-3 hours 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:** Undergrad. Business Administration C112/Letters and Science C112

**Also listed as:** L & S C196C

The Berkeley Changemaker: 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 2023, Fall 2020, Spring 2015

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 [-]