Industrial Engineering and Operations Research and Business Administration

M.E.T. at a Glance: One Program, Two Bachelor of Science (BS) Degrees

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

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

Admission to the M.E.T. Program

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

For further information, please see the M.E.T. website (http://met.berkeley.edu).

Accreditation

The IEOR 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 MET 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, and a minimum of 12 upper division non-business units are required. (Upper division IEOR classes will fulfill the 12 upper division non-business units.)
2. Students must complete the College Requirements (p. 3) 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, 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 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGBA 10</td>
<td>Principles of Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1</td>
<td>Introduction to Economics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1A</td>
<td>Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1B</td>
<td>Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 53</td>
<td>Multivariable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 54</td>
<td>Linear Algebra and Differential Equations</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1A</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 1AL</td>
<td>General Chemistry Laboratory 1</td>
<td></td>
</tr>
<tr>
<td>or CHEM 4A</td>
<td>General Chemistry and Quantitative Analysis</td>
<td></td>
</tr>
<tr>
<td>PHYSICS 7A</td>
<td>Physics for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>PHYSICS 7B</td>
<td>Physics for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>ENGIN 7</td>
<td>Introduction to Computer Programming for Scientists and Engineers (Programming)</td>
<td>4</td>
</tr>
</tbody>
</table>

Programming

Select one of the following: 2
- COMPSCI C8 Foundations of Data Science
- COMPSCI 61A The Structure and Interpretation of Computer Programs

Engineering Breadth Electives

Select at least 9 units from the following:
- BIO ENG 10 Introduction to Biomedicine for Engineers
- BIO ENG 102 Biomechanics: Analysis and Design
- CIV ENG 11 Engineered Systems and Sustainability
- CIV ENG C30/ Introduction to Solid Mechanics
- MEC ENG C85
- CIV ENG 60 Structure and Properties of Civil Engineering Materials
- CIV ENG 70 Engineering Geology
- CIV ENG 155 Transportation Systems Engineering
- DES INV 15 Design Methodology 3
- EL ENG 16A Designing Information Devices and Systems I
- EL ENG 16B Designing Information Devices and Systems II
- ENGIN 15 Design Methodology 3
- ENGIN 25 Visualization for Design
- ENGIN 26 Three-Dimensional Modeling for Design
- ENGIN 27 Introduction to Manufacturing and Tolerancing
- ENGIN 40 Engineering Thermodynamics
- MAT SCI 45 Properties of Materials
- MAT SCI 45L Properties of Materials Laboratory
- MAT SCI 111 Properties of Electronic Materials
- MEC ENG 40 Thermodynamics
- MEC ENG 132 Dynamic Systems and Feedback

1 CHEM 4A (http://guide.berkeley.edu/search/?P=CHEM%204A) is intended for students majoring in chemistry or a closely-related field.
Students must acquire fluent programming skills as demonstrated by completion of coursework in a high-level language such as Python, C, C++ or Java. This requirement may be completed by taking CS 61A or CS C8 or equivalent. The CS 9xx series self-paced courses are intended for those already skilled as programmers in a high-level language to learn a second language and thus are not appropriate for meeting this requirement.

Students will not receive credit for both DES INV 15 (http://guide.berkeley.edu/search/?P=DES%20INV%2015) and ENGIN 15 (http://guide.berkeley.edu/search/?P=ENGIN%2015).

Upper Division Requirements

**IEOR Upper Division**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGIN 120</td>
<td>Principles of Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>or IND ENG 120</td>
<td>Principles of Engineering Economics</td>
<td></td>
</tr>
<tr>
<td>IND ENG 160</td>
<td>Nonlinear and Discrete Optimization</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG 162</td>
<td>Linear Programming and Network Flows</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG 165</td>
<td>Engineering Statistics, Quality Control, and Forcasting</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG 171</td>
<td>Technology Firm Leadership</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG 172</td>
<td>Probability and Risk Analysis for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 134</td>
<td>Concepts of Probability</td>
<td></td>
</tr>
<tr>
<td>or STAT 140</td>
<td>Probability for Data Science</td>
<td></td>
</tr>
<tr>
<td>IND ENG 173</td>
<td>Introduction to Stochastic Processes</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG 180</td>
<td>Senior Project</td>
<td>4</td>
</tr>
</tbody>
</table>

**IEOR Electives**

Select 6 courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IND ENG 115</td>
<td>Industrial and Commercial Data Systems</td>
<td></td>
</tr>
<tr>
<td>IND ENG 130</td>
<td>Methods of Manufacturing Improvement</td>
<td></td>
</tr>
<tr>
<td>IND ENG 142</td>
<td>Introduction to Machine Learning and Data Analytics</td>
<td></td>
</tr>
<tr>
<td>IND ENG 150</td>
<td>Production Systems Analysis</td>
<td></td>
</tr>
<tr>
<td>IND ENG 151</td>
<td>Service Operations Design and Analysis</td>
<td></td>
</tr>
<tr>
<td>IND ENG 153</td>
<td>Logistics Network Design and Supply Chain Management</td>
<td></td>
</tr>
<tr>
<td>IND ENG 166</td>
<td>Decision Analytics</td>
<td></td>
</tr>
<tr>
<td>IND ENG 170</td>
<td>Industrial Design and Human Factors</td>
<td></td>
</tr>
</tbody>
</table>

**Business Administration Upper Division**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGBA 100</td>
<td>Business Communication</td>
<td>2</td>
</tr>
<tr>
<td>UGBA 101A</td>
<td>Microeconomic Analysis for Business Decisions</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 101B</td>
<td>Macroeconomic Analysis for Business Decisions</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 102A</td>
<td>Introduction to Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 102B</td>
<td>Introduction to Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 103</td>
<td>Introduction to Finance</td>
<td>4</td>
</tr>
<tr>
<td>UGBA 104</td>
<td>Analytic Decision Modeling Using Spreadsheets</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 106</td>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 107</td>
<td>The Social, Political, and Ethical Environment of Business</td>
<td>3</td>
</tr>
</tbody>
</table>

**MET Special Topics**

Two courses required. 4 2-4

**Upper Division Business Administration Elective Courses**

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGBA 113</td>
<td>Managerial Economics</td>
<td></td>
</tr>
<tr>
<td>UGBA 115</td>
<td>Competitive Strategy</td>
<td></td>
</tr>
<tr>
<td>UGBA 117</td>
<td>Special Topics in Economic Analysis and Policy</td>
<td></td>
</tr>
<tr>
<td>UGBA 118</td>
<td>International Trade</td>
<td></td>
</tr>
<tr>
<td>UGBA 119</td>
<td>Leading Strategy Implementation</td>
<td></td>
</tr>
<tr>
<td>UGBA 120AA</td>
<td>Intermediate Financial Accounting 1</td>
<td></td>
</tr>
<tr>
<td>UGBA 120AB</td>
<td>Intermediate Financial Accounting 2</td>
<td></td>
</tr>
<tr>
<td>UGBA 120B</td>
<td>Advanced Financial Accounting</td>
<td></td>
</tr>
<tr>
<td>UGBA 121</td>
<td>Federal Income Tax Accounting</td>
<td></td>
</tr>
<tr>
<td>UGBA 122</td>
<td>Financial Information Analysis</td>
<td></td>
</tr>
<tr>
<td>UGBA 123</td>
<td>Operating and Financial Reporting Issues in the Financial Services Industry</td>
<td></td>
</tr>
<tr>
<td>UGBA W125</td>
<td>Professional Judgment in Accounting</td>
<td></td>
</tr>
<tr>
<td>UGBA 126</td>
<td>Auditing</td>
<td></td>
</tr>
<tr>
<td>UGBA 127</td>
<td>Special Topics in Accounting</td>
<td></td>
</tr>
<tr>
<td>UGBA 128</td>
<td>Strategic Cost Management</td>
<td></td>
</tr>
<tr>
<td>UGBA 129</td>
<td>Financial Reporting for Complex Transactions</td>
<td></td>
</tr>
<tr>
<td>UGBA 131</td>
<td>Corporate Finance and Financial Statement Analysis</td>
<td></td>
</tr>
<tr>
<td>UGBA 132</td>
<td>Financial Institutions and Markets</td>
<td></td>
</tr>
<tr>
<td>UGBA 133</td>
<td>Investments</td>
<td></td>
</tr>
<tr>
<td>UGBA 136F</td>
<td>Behavioral Finance</td>
<td></td>
</tr>
<tr>
<td>UGBA 137</td>
<td>Special Topics in Finance</td>
<td></td>
</tr>
<tr>
<td>UGBA 141</td>
<td>Production and Operations Management</td>
<td></td>
</tr>
<tr>
<td>UGBA 143</td>
<td>Game Theory and Business Decisions</td>
<td></td>
</tr>
<tr>
<td>UGBA 147</td>
<td>Special Topics in Operations and Information Technology Management</td>
<td></td>
</tr>
<tr>
<td>UGBA 151</td>
<td>Management of Human Resources</td>
<td></td>
</tr>
<tr>
<td>UGBA 152</td>
<td>Negotiation and Conflict Resolution</td>
<td></td>
</tr>
<tr>
<td>UGBA 154</td>
<td>Power and Politics in Organizations</td>
<td></td>
</tr>
<tr>
<td>UGBA 155</td>
<td>Leadership</td>
<td></td>
</tr>
<tr>
<td>UGBA 156AC</td>
<td>Diversity in the Workplace</td>
<td></td>
</tr>
<tr>
<td>UGBA 157</td>
<td>Special Topics in the Management of Organizations</td>
<td></td>
</tr>
<tr>
<td>UGBA 160</td>
<td>Consumer Behavior</td>
<td></td>
</tr>
<tr>
<td>UGBA 161</td>
<td>Marketing Research: Data and Analytics</td>
<td></td>
</tr>
<tr>
<td>UGBA 162</td>
<td>Brand Management and Strategy</td>
<td></td>
</tr>
<tr>
<td>UGBA 162A</td>
<td>Product Branding and Branded Entertainment</td>
<td></td>
</tr>
<tr>
<td>UGBA 165</td>
<td>Advertising Strategy</td>
<td></td>
</tr>
<tr>
<td>UGBA 167</td>
<td>Special Topics in Marketing</td>
<td></td>
</tr>
<tr>
<td>UGBA 168B</td>
<td>International Marketing</td>
<td></td>
</tr>
<tr>
<td>UGBA 169</td>
<td>Pricing</td>
<td></td>
</tr>
<tr>
<td>UGBA 170</td>
<td>Ethical Leadership in Business</td>
<td></td>
</tr>
<tr>
<td>UGBA C172</td>
<td>History of American Business</td>
<td></td>
</tr>
<tr>
<td>UGBA 175</td>
<td>Legal Aspects of Management</td>
<td></td>
</tr>
<tr>
<td>UGBA 176</td>
<td>Innovations in Communications and Public Relations</td>
<td></td>
</tr>
<tr>
<td>UGBA 177</td>
<td>Special Topics in Business and Public Policy</td>
<td></td>
</tr>
<tr>
<td>UGBA 178</td>
<td>Introduction to International Business</td>
<td></td>
</tr>
<tr>
<td>UGBA 179</td>
<td>International Consulting for Small and Medium-Sized Enterprises</td>
<td></td>
</tr>
<tr>
<td>UGBA 180</td>
<td>Introduction to Real Estate and Urban Land Economics</td>
<td></td>
</tr>
</tbody>
</table>
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 (http://guide.berkeley.edu/undergraduate/colleges-schools/haas-business/arts-literature)
- Historical Studies (http://guide.berkeley.edu/undergraduate/colleges-schools/haas-business/historical-studies)
- International Studies (http://guide.berkeley.edu/undergraduate/colleges-schools/haas-business/international-studies)
- Philosophy and Values (http://guide.berkeley.edu/undergraduate/colleges-schools/haas-business/philosophy-values) (will be satisfied with UGBA 107)
Physical Science (http://guide.berkeley.edu/undergraduate/colleges-schools/haas-business/physical-science) (will be satisfied with Physics 7B)

Social and Behavioral Sciences (http://guide.berkeley.edu/undergraduate/colleges-schools/haas-business/social-behavioral-sciences) (will be satisfied with Econ 1)

- With the exception of UGBA 107, UGBA courses cannot be used to fulfill breadth requirements.
- With the exception of Econ 1, microeconomics and macroeconomics at any level (Econ 2, Econ 3, Econ 100A/B, Econ 101A/B, IAS 106/107) cannot be used to fulfill breadth requirements.
- Courses offered by any Engineering department, with the exception of BIO ENG 100, COMPSCI C79, ENGIN 125, 157AC, MEC ENG 191K and 191AC, cannot be used to fulfill breadth requirements.
- No more than two courses from any one department may be used to satisfy the breadth requirement (L&S Discovery courses (http://lsdiscovery.berkeley.edu) are exempt).
- Advanced Placement or International Baccalaureate exams cannot be used to fulfill the breadth requirement. Some A-Level exams are accepted, but a maximum of two A-Level exams may be used to fulfill breadth requirements.
- Two of the breadth courses must be upper-division (courses numbered 100-196).
- Courses numbered 97, 98, 99, or above 196 may not be used to complete any breadth requirement.
- Breadth courses must be a minimum of 3 semester units.
- Reading & Composition courses cannot be used to fulfill breadth requirements.

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

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

Unit Requirements
- A minimum of 120 units are required to graduate.
- A maximum of 16 units of Special Studies coursework (courses numbered 97, 98, 99, 197, 198, or 199) will count towards the 120 units; a maximum of four are allowed in a given semester.
- A maximum of four units of Physical Education from any school attended will count towards the 120 units.
- No more than 1/3 of a student’s total UC Berkeley units may be taken Pass/No Pass, including physical education courses, Education Abroad Program, or courses taken on another UC campus.

**University of California Requirements**

Entry Level Writing (http://guide.berkeley.edu/undergraduate/colleges-schools/natural-resources/entry-level-writing-requirement)

All students who will enter the University of California as freshmen must demonstrate their command of the English language by fulfilling the Entry Level Writing Requirement. 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/natural-resources/american-history-institutions-requirement)

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

**Campus Requirement**

American Cultures (http://guide.berkeley.edu/undergraduate/colleges-schools/natural-resources/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 in 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.
<table>
<thead>
<tr>
<th>Breadth: Arts &amp; Literature</th>
<th>Engineering Breadth 3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>IND ENG 160</td>
<td>3 IND ENG 165</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG 162</td>
<td>3 IND ENG 173</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG Elective 13</td>
<td>3 IND ENG Elective 13</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG 171 15</td>
<td>3 UGBA 101B</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 100</td>
<td>2 UGBA 102A</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 101A</td>
<td>3 UGBA 107</td>
<td>3</td>
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<tr>
<td>(Breadth: Philosophy and Values) 4</td>
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<tr>
<td>UGBA 106</td>
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<tr>
<td>Third Year</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>17</td>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>IND ENG Elective 13</td>
<td>3 IND ENG Elective 13</td>
<td>3</td>
</tr>
<tr>
<td>IND ENG Elective 13</td>
<td>3 IND ENG 180</td>
<td>4</td>
</tr>
<tr>
<td>IND ENG Elective 13</td>
<td>3 UGBA 102B</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 103</td>
<td>4 UGBA Elective 14</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 104</td>
<td>3 UGBA Elective 14</td>
<td>2-3</td>
</tr>
<tr>
<td>M.E.T. Special Topics 7</td>
<td>1-2 UGBA Elective 14</td>
<td>2-3</td>
</tr>
<tr>
<td>(Breadth: International Studies) 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-18</td>
<td>20-22</td>
<td></td>
</tr>
</tbody>
</table>

Total Units: 150-154

1. 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.

2. CHEM 1A/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.

3. Engineering Breadth: 9 units must be completed from the following list: BIO ENG 10, BIO ENG 102, CIV ENG 11, CIV ENG C30, CIV ENG 60, CIV ENG 70, CIV ENG 155, DES INV 15, EL ENG 16A, EL ENG 16B, ENGIN 15, ENGIN 25, ENGIN 26, ENGIN 27, ENGIN 40, MAT SCI 45, MAT SCI 45L, MAT SCI 111, MEC ENG 40, MEC ENG C85, MEC ENG 132. Students will not receive credit for both DES INV 15 and ENGIN 15.

4. ECON 1 and UGBA 107 will be accepted for the Social and Behavioral Sciences and Philosophy and Values breadth requirements, respectively, as exceptions for students in the M.E.T. Program. The Biological Science breadth requirement is waived for students in the M.E.T. Program. In order to satisfy the College of Engineering Humanities and Social Sciences breadth requirement, two of the breadth courses must be upper division. Some American Cultures courses will also fulfill the Arts & Literature or Historical Studies breadth requirement; use Requirements filters to search the Class Schedule (http://classes.berkeley.edu) for courses that apply. See College Requirements for further restrictions on breadth courses.

5. 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.

6. 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, a score of 5, 6 or 7 on the IB Higher Level English A2 exam, or a grade of A, B or C on the A-Level English Literature exam.

7. M.E.T. Special Topics courses will count as upper division business units.

8. 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.

9. PHYSICS 7A may be fulfilled with a score of 5 on the AP Physics C Mechanics exam.

10. ENGIN 120 or IND ENG 120 will be accepted for the Business Administration UGBA 105 requirement for students in the M.E.T. Program.

11. STAT 134, STAT 140 or IND ENG 172 will be accepted for the Business Administration statistics requirement for students in the M.E.T. Program. IND ENG 172 is an alternative course for STAT 134 or STAT 140. In semesters when IND ENG 172 is offered, we recommend students take IND ENG 172. Students will receive credit for only one of these courses.

12. Students must acquire fluent programming skills as demonstrated by completion of coursework in a high-level language such as Python, C, C++, or Java. This requirement may be completed by taking CS 61A or CS C8 or equivalent. The CS 9xx series self-paced courses are intended for those already skilled as programmers in a high-level language to learn a second language and thus are not appropriate for meeting this requirement.

13. Students must take a minimum of six courses from the following: IND ENG 115, IND ENG 130, IND ENG 142, IND ENG 150, IND ENG 151, IND ENG 153, IND ENG 166, IND ENG 170.

14. Students must complete a minimum of 38 units of upper division business coursework. See UGBA Elective course list under “Major Requirements” tab. Students who take IND ENG 151 and IND ENG 150, or IND ENG 151 and IND ENG 153, will not receive credit for UGBA 141.

15. IND ENG 171 will be used to fulfill the UGBA 105 requirement for the Business major.

- Industrial Engineering and Operations Research (p. 6)
- Business Administration (p. 21)
Industrial Engineering and Operations Research

IND ENG 24 Freshman Seminars 1 Unit
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017, Fall 2016, Fall 2015
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 [+]

Objectives Outcomes

Course Objectives: Provide an introduction to the field of Industrial Engineering and Operations Research through a series of lectures.

Student Learning Outcomes: Learn more about Industrial Engineering and Operations Research.

Rules & Requirements

Repeat rules: Course may be repeated for credit when topic changes. 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: Industrial Engin and Oper Research/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 [-]

IND ENG 66 A Bivariate Introduction to IE and OR 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2016
This Freshman-level Introductory course will provide an intuitive overview of the fundamental problems addressed and methods in the fields of Industrial Engineering and Operations Research including Constrained Optimization, Human Factors, Data Analytics, Queues and Chains, and Linear Programming. The course will focus on two-dimensional, i.e., bivariate, examples where the problems and methods are amenable to visualization and geometric intuition. The course will discuss applications such as dieting, scheduling, and transportation. This course will not require pre-requisites and will present the core concepts in a self-contained manner that is accessible to Freshmen to provide the foundation for future coursework.

A Bivariate Introduction to IE and OR: Read More [+]

Objectives Outcomes

Course Objectives: • Provide a broad survey of the important topics in IE and OR, and develop intuition about problems, algorithms, and abstractions using bivariate examples (2D).
• Describe different mathematical abstractions used in IEOR (e.g., graphs, queues, Markov chains), and how to use these abstractions to model real-world problems.
• Introduce students to the data analysis process including: developing a hypothesis, acquiring data, processing the data, testing the hypothesis, and presenting results.
• Provide students with concrete examples of how the mathematical tools from the class apply to real problems such as dieting, scheduling, and transportation.

Rules & Requirements

Credit Restrictions: Course restricted to Freshman students.

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructor: Goldberg

A Bivariate Introduction to IE and OR: Read Less [-]
IND ENG 95 A. Richard Newton Lecture Series 1 Unit
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
This lecture series serves as an entry point for undergraduate and graduate curriculum sequences in entrepreneurship and innovation. The series, established in 2005, is named in honor of A. Richard Newton, a visionary technology industry leader and late dean of the University of California Berkeley College of Engineering. The course features a selection of high-level industry speakers who share their insights on industry developments, leadership, and innovation based on their careers.
A. Richard Newton Lecture Series: Read More [+]
Rules & Requirements
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1.5 hours of colloquium per week
Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Alternative to final exam.
Instructor: Sidhu
A. Richard Newton Lecture Series: Read Less [-]

IND ENG 98 Supervised Group Study and Research 1 - 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2015, Spring 2015
Supervised group study and research by lower division students.
Supervised Group Study and Research: Read More [+]
Rules & Requirements
Prerequisites: Consent of instructor
Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1-3 hours of directed group study per week
Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Supervised Group Study and Research: Read Less [-]

IND ENG 99 Supervised Independent Study and Research 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Prior to 2007
Supervised independent study for lower division students.
Supervised Independent Study and Research: Read More [+]
Rules & Requirements
Prerequisites: Freshman or sophomore standing and 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 independent study per week
Summer:
8 weeks - 1.5-7.5 hours of independent study per week
10 weeks - 1.5-6 hours of independent study per week
Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Supervised Independent Study and Research: Read Less [-]

IND ENG 115 Industrial and Commercial Data Systems 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017, Fall 2016, Fall 2015
Design and implementation of databases, with an emphasis on industrial and commercial applications. Relational algebra, SQL, normalization. Students work in teams with local companies on a database design project. WWW design and queries.
Industrial and Commercial Data Systems: Read More [+]
Rules & Requirements
Prerequisites: Upper division standing
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 2 hours of laboratory per week
Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Goldberg
Industrial and Commercial Data Systems: Read Less [-]
IND ENG 120 Principles of Engineering Economics 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Prior to 2007
Principles of Engineering Economics: Read More [+]

Rules & Requirements
Credit Restrictions: Students will receive 2 units for 120 after taking Civil Engineering 167. Students will not receive credit after taking Engineering 120.

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week
Summer: 8 weeks - 4 hours of lecture and 2 hours of discussion per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Adler

Principles of Engineering Economics: Read Less [-]

IND ENG 130 Methods of Manufacturing Improvement 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017, Fall 2016, Fall 2015
Analytical techniques for the improvement of manufacturing performance along the dimensions of productivity, quality, customer service, and throughput. Techniques for yield analysis, process control, inspection sampling, equipment efficiency analysis, cycle time reduction, and on-time delivery improvement. Applications on semiconductor manufacturing or other industrial settings.
Methods of Manufacturing Improvement: Read More [+]

Rules & Requirements
Prerequisites: 172, Mathematics 54, or Statistics 134 (may be taken concurrently)

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Leachman

Methods of Manufacturing Improvement: Read Less [-]

IND ENG 135 Applied Data Science with Venture Applications 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017
This highly-applied course surveys a variety of key of concepts and tools that are useful for designing and building applications that process data signals of information. The course introduces modern open source, computer programming tools, libraries, and code samples that can be used to implement data applications. The mathematical concepts highlighted in this course include filtering, prediction, classification, decision-making, Markov chains, LTI systems, spectral analysis, and frameworks for learning from data. Each math concept is linked to implementation using Python using libraries for math array functions (NumPy), manipulation of tables (Pandas), long term storage (SQL, JSON, CSV files), natural language (NLTK), and ML frameworks.
Applied Data Science with Venture Applications: Read More [+]

Objectives Outcomes
Student Learning Outcomes: Students will be able to design and build data sample application systems that can interpret and use data for a wide range of real life applications across many disciplines and industries; implement these concepts within applications with modern open source CS tools; understand relevant mathematical concepts that are used in systems that process data;

Rules & Requirements
Prerequisites: Prerequisites include the ability to write code in Python, and a probability or statistics course. This course is ideal for students who have taken CS/INFO/STAT C8

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Alternative to final exam.
Instructor: Sidhu

Applied Data Science with Venture Applications: Read Less [-]
IND ENG 142 Introduction to Machine Learning and Data Analytics 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017
This course introduces students to key techniques in machine learning and data analytics through a diverse set of examples using real datasets from domains such as e-commerce, healthcare, social media, sports, the Internet, and more. Through these examples, exercises in R, and a comprehensive team project, students will gain experience understanding and applying techniques such as linear regression, logistic regression, classification and regression trees, random forests, boosting, text mining, data cleaning and manipulation, data visualization, network analysis, time series modeling, clustering, principal component analysis, regularization, and large-scale learning.
Introduction to Machine Learning and Data Analytics: Read More [+]

Objectives

Course Objectives:
1. To expose students to a variety of statistical learning methods, all of which are relevant in useful in wide range of disciplines and applications.
2. To carefully present the statistical and computational assumptions, trade-offs, and intuition underlying each method discussed so that students will be trained to determine which techniques are most appropriate for a given problem.
3. Through a series of real-world examples, students will learn to identify opportunities to leverage the capabilities of data analytics and will see how data analytics can provide a competitive edge for companies.
4. To train students in how to actually apply each method that is discussed in class, through a series of labs and programming exercises.
5. For students to gain some project-based practical data science experience, which involves identifying a relevant problem to be solved or question to be answered, gathering and cleaning data, and applying analytical techniques.
6. To introduce students to advanced topics that are important to the successful application of machine learning methods in practice, include how methods for prediction are integrated with optimization models and modern optimization techniques for large-scale learning problems.

Rules & Requirements

Prerequisites: IEOR 165 or equivalent course in statistics. Prior exposure to optimization is helpful but not strictly necessary. Some programming experience/literacy is expected.

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructor: Grigas, Paul

IND ENG 150 Production Systems Analysis 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2016, Fall 2015
Quantitative models for operational and tactical decision making in production systems, including production planning, inventory control, forecasting, and scheduling.

Rules & Requirements

Prerequisites: 160, 161, 162, 165, and Engineering 120, or senior standing in manufacturing engineering

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructor: Yano

IND ENG 151 Service Operations Design and Analysis 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017, Fall 2016, Fall 2015
This course is concerned with improving processes and designing facilities for service businesses such as banks, health care organizations, telephone call centers, restaurants, and transportation providers. Major topics in the course include design of service processes, layout and location of service facilities, demand forecasting, demand management, employee scheduling, service quality management, and capacity planning.

Rules & Requirements

Prerequisites: 161, 162, and a course in statistics

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructors: Grigas, Paul
IND ENG 153 Logistics Network Design and Supply Chain Management 3 Units
Offered through: Industrial Engin and Oper Research
We will focus primarily on both quantitative and qualitative issues which arise in the integrated design and management of the entire logistics network. Models and solution techniques for facility location and logistics network design will be considered. In addition, qualitative issues in distribution network structuring, centralized versus decentralized network control, variability in the supply chain, strategic partnerships, and product design for logistics will be considered through discussions and cases. Logistics Network Design and Supply Chain Management: Read More [+]

Rules & Requirements
Prerequisites: 160, 162 or senior standing

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Kaminsky

Logistics Network Design and Supply Chain Management: Read Less [-]

IND ENG 160 Nonlinear and Discrete Optimization 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017, Spring 2017, Fall 2016
This course introduces unconstrained and constrained optimization with continuous and discrete domains. Convex sets and convex functions; local optimality; KKT conditions; Lagrangian duality; steepest descent and Newton's method. Modeling with integer variables; branch-and-bound method; cutting planes. Models on production/inventory planning, logistics, portfolio optimization, factor modeling, classification with support vector machines.
Nonlinear and Discrete Optimization: Read More [+]

Rules & Requirements
Prerequisites: Mathematics 53 and 54

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

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Atamturk

Nonlinear and Discrete Optimization: Read Less [-]

IND ENG 162 Linear Programming and Network Flows 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
This course addresses modeling and algorithms for optimization of linear constrained optimization problems. The simplex method; theorems of duality; complementary slackness. Applications in production planning and resource allocation. Graph and network problems as linear programs with integer solutions. Algorithms for selected network flow problems. Transportation and logistics problems. Dynamic programming and its role in applications to shortest paths, project management and equipment replacement.
Linear Programming and Network Flows: Read More [+]

Rules & Requirements
Prerequisites: Mathematics 53 and 54

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

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Hochbaum

Linear Programming and Network Flows: Read Less [-]

IND ENG S162 Linear Programming 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Prior to 2007
Linear Programming: Read More [+]

Rules & Requirements
Prerequisites: Mathematics 50A

Hours & Format
Summer: 8 weeks - 4 hours of lecture and 2 hours of discussion per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam not required.
Instructor: Kaminsky

Linear Programming: Read Less [-]
IND ENG 164 Introduction to Optimization Modeling 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Not yet offered
Designed for students from any science/engineering major, this upper-division course will introduce students to optimization models, and train them to use software tools to model and solve optimization problems. The main goal is to develop proficiency in common optimization modeling languages, and learn how to integrate them with underlying optimization solvers. Students will work primarily on modeling exercises, which will develop confidence in modeling and solve optimization methods using software packages, and will require some programming. Review of linear and nonlinear optimization models, including optimization problems with discrete decision variables. Applications to practical problems from engineering and data science.

Objectives Outcomes

- To introduce students to the core concepts of optimization
- To train them in the art and science of using software tools to model and solve optimization problems.

Rules & Requirements

Prerequisites: No pre-requisites except some Python programming skills, which can be met by CS 8 (or any other Python-based course)

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Introduction to Optimization Modeling: Read More [+]

IND ENG 165 Engineering Statistics, Quality Control, and Forcasting 3 Units
Offered through: Industrial Engin and Oper Research
This course will introduce students to basic statistical techniques such as parameter estimation, hypothesis testing, regression analysis, analysis of variance. Applications in forecasting and quality control.

Rules & Requirements

Prerequisites: Industrial Engineering 172 or Statistics 134 or an equivalent course in probability theory

Credit Restrictions: Students will receive no credit for Industrial Engineering 165 after taking Statistics 135.

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 1 hour of discussion per week

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Engineering Statistics, Quality Control, and Forcasting: Read Less [-]

IND ENG 166 Decision Analytics 3 Units
Offered through: Industrial Engin and Oper Research
Introductory course on the theory and applications of decision analysis. Elective course that provides a systematic evaluation of decision-making problems under uncertainty. Emphasis on the formulation, analysis, and use of decision-making techniques in engineering, operations research and systems analysis. Includes formulation of risk problems and probabilistic risk assessments. Graphical methods and computer software using event trees, decision trees, and influence diagrams that focus on model design.

Rules & Requirements

Prerequisites: 172 or Statistics 134

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructors: Oren, Righter

Decision Analytics: Read Less [-]
IND ENG 170 Industrial Design and Human Factors 3 Units
Offered through: Industrial Engin and Oper Research
This course surveys topics related to the design of products and interfaces ranging from alarm clocks, cell phones, and dashboards to logos, presentations, and web sites. Design of such systems requires familiarity with human factors and ergonomics, including the physics and perception of color, sound, and touch, as well as familiarity with case studies and contemporary practices in interface design and usability testing. Students will solve a series of design problems individually and in teams.

Rules & Requirements
Prerequisites: Upper division standing

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Goldberg

IND ENG 171 Technology Firm Leadership 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
This course explores key management and leadership concepts relevant to the high-technology world. Topics include the firm's key operations, strategic issues, and managerial leadership including personal leadership and talent management. This course prepares technical and business minded students for careers focused on professional and management track careers in high technology. Students undertake intensive study of actual business situations through rigorous case-study analysis.

Rules & Requirements
Prerequisites: Upper division standing
Credit Restrictions: Students will receive no credit for 171 after taking Undergraduate Business Administration 105.
Repeat rules: Course may be repeated for credit without restriction.

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: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
IND ENG 172 Probability and Risk Analysis for Engineers 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017, Fall 2016, Fall 2015
This is an introductory course in probability designed to develop a good understanding of uncertain phenomena and the mathematical tools used to model and analyze it. Applications will be given in such areas as reliability theory, risk theory, inventory theory, financial models, and computer science, among others. To complement the theory, the course also covers the basics of stochastic simulation. This course is a probability course and cannot be used to fulfill any engineering unit or elective requirements.

Probability and Risk Analysis for Engineers: Read More [+]

Objectives Outcomes

Course Objectives: Students will learn how to model random phenomena and learn about a variety of areas where it is important to estimate the likelihood of uncertain events. Students will also learn how to use computer simulation to replicate and analyze these events.

Rules & Requirements

Prerequisites: Students should have a solid knowledge of calculus, including multiple variable integration, such as Mathematics 1A-1B or 16A-16B, as well as programming experience in Matlab or Python

Credit Restrictions: Students will receive no credit for 172 after taking Statistics 134 or Stat 140.

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

Hours & Format

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

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Probability and Risk Analysis for Engineers: Read Less [-]

IND ENG 173 Introduction to Stochastic Processes 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Spring 2017
This is an introductory course in stochastic models. It builds upon a basic course in probability theory and extends the concept of a single random variable into collections of random variables known as stochastic processes. The course focuses on discrete-time Markov chains, Poisson process, continuous-time Markov chains, and renewal theory. It also discusses applications to queueing theory, risk analysis and reliability theory. Along with the theory, the course covers stochastic simulation techniques that will allow students to go beyond the models and applications discussed in the course.

Introduction to Stochastic Processes: Read More [+]

Objectives Outcomes

Course Objectives: Students will learn how to model random phenomena that evolves over time, as well as the simulation techniques that enable the replication of such problems using a computer. By discussing various applications in science and engineering, students will be able to model many real world problems where uncertainty plays an important role.

Rules & Requirements

Prerequisites: Students should have taken a probability course, such as STAT 134 or IND ENG 172, and should have programming experience in Matlab or Python

Credit Restrictions: Students will receive no credit for Ind Eng 173 after taking Ind Eng 161.

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Introduction to Stochastic Processes: Read Less [-]
IND ENG 180 Senior Project 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
Application of systems analysis and industrial engineering to the analysis, planning, and/or design of industrial, service, and government systems. Consideration of technical and economic aspects of equipment and process design. Students work in teams under faculty supervision. Topics vary yearly.
Senior Project: Read More [+]

Rules & Requirements
Prerequisites: 131, 160, 161, 162, 165, Engineering 120, and three other Industrial Engineering and Operations Research electives

Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture, 1 hour of discussion, and 6 hours of fieldwork per week
Summer: 10 weeks - 1.5 hours of lecture, 1.5 hours of discussion, and 9 hours of fieldwork per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.
Senior Project: Read Less [-]

IND ENG 185 Challenge Lab 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Fall 2017
This course is meant for students in engineering and other disciplines who seek a challenging, interactive, team-based, and hands-on learning experience in entrepreneurship and technology. In this highly experiential course, students work in simulated start-up teams to create products or start-up ideas to address a broadly-defined need of an industry partner or social challenge.
Challenge Lab: Read More [+]

Objectives Outcomes
Course Objectives:
1) To catalyze learning through experiential entrepreneurship
2) To help students understand the entrepreneurial context, and how it can create better outcomes.
3) To help students identify the best role for themselves within an entrepreneurial organization.

Student Learning Outcomes:
1) Gain experience with effectively refining ideas and pivoting based on feedback and external factors.
2) Gain experience building effective teams to develop and execute an idea
3) Become comfortable with failure and how to learn from failure.
4) Become adept at succinctly communicating ideas in terms of value proposition and business viability.

Rules & Requirements
Repeat rules: Course may be repeated for credit when topic changes.
Course may be repeated for credit when topic changes.

Hours & Format
Fall and/or spring: 15 weeks - 4 hours of seminar per week
Summer:
6 weeks - 10 hours of seminar per week
8 weeks - 7.5 hours of seminar per week
10 weeks - 6 hours of seminar per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.
Instructors: Goldberg, Sidhu, Wroblewki, IEOR / CET Instructors
Challenge Lab: Read Less [-]
IND ENG 186 Product Management 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
Too often we are enamored in our brilliant ideas, we skip the most important part: building products consumers will want and use. Precious time and effort is wasted on engineering perfect products only to launch to no users. This course teaches product management skills such as attributes of great product managers, reducing risk and cost while accelerating time to market, product life cycle, stakeholder management and effective development processes.
Product Management: Read More [+]

Objectives Outcomes

Course Objectives:
• Students will experience a live development of a product within the context of a product development process.
• Students will learn common methods used in product management
• Students will understand the difference between engineering design and product development as a process commonly used in new venture environments.

Student Learning Outcomes:
• Students will actually develop a real world functioning product, to be described as Minimum Viable.
• Students will be able to manage a product development process that leads to a product that is technically feasible as well as desired by customers.
• Students will gain experience needed to work as product managers in real life environments.

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructors: Shen, Sidhu, IEOR / CET Instructors

Product Management: Read Less [-]

IND ENG 190A Advanced Topics in Industrial Engineering and Operations Research 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2016, Spring 2016
The 190 series cannot be used to fulfill any engineering requirement (engineering units, courses, technical electives, or otherwise).
Advanced Topics in Industrial Engineering and Operations Research: 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 seminar per week

Summer:
8 weeks - 1.5-7.5 hours of seminar per week
10 weeks - 1.5-6 hours of seminar per week

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Advanced Topics in Industrial Engineering and Operations Research: Read Less [-]

IND ENG 190B Advanced Topics in Industrial Engineering and Operations Research: Entrepreneurial Marketing and Finance 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2017, Spring 2014, Fall 2013
The 190 series cannot be used to fulfill any engineering requirement (engineering units, courses, technical electives, or otherwise).
Advanced Topics in Industrial Engineering and Operations Research: 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 seminar per week

Summer:
8 weeks - 1.5-7.5 hours of seminar per week
10 weeks - 1.5-6 hours of seminar per week

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Advanced Topics in Industrial Engineering and Operations Research: Read Less [-]
IND ENG 190C Advanced Topics in Industrial Engineering and Operations Research 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
The 190 series cannot be used to fulfill any engineering requirement (engineering units, courses, technical electives, or otherwise). Advanced Topics in Industrial Engineering and Operations Research: 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 seminar per week
Summer:
8 weeks - 1.5-7.5 hours of seminar per week
10 weeks - 1.5-6 hours of seminar per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/ Undergraduate
Grading/Final exam status: The grading option will be decided by the instructor when the class is offered. Final exam required.
Advanced Topics in Industrial Engineering and Operations Research: Read Less [-]

IND ENG 190D Advanced Topics in Industrial Engineering and Operations Research 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2017, Fall 2014, Spring 2014
The 190 series cannot be used to fulfill any engineering requirement (engineering units, courses, technical electives, or otherwise). Advanced Topics in Industrial Engineering and Operations Research: 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 seminar per week
Summer:
8 weeks - 1.5-7.5 hours of seminar per week
10 weeks - 1.5-6 hours of seminar per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/ Undergraduate
Grading/Final exam status: The grading option will be decided by the instructor when the class is offered. Final exam required.
Advanced Topics in Industrial Engineering and Operations Research: Read Less [-]
IND ENG 190G Advanced Topics in Industrial Engineering and Operations Research 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2016, Spring 2015, Spring 2014
The 190 series cannot be used to fulfill any engineering requirement (engineering units, courses, technical electives, or otherwise).
Advanced Topics in Industrial Engineering and Operations Research: 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 seminar per week
Summer: 8 weeks - 1.5-7.5 hours of seminar per week
10 weeks - 1.5-6 hours of seminar per week

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Advanced Topics in Industrial Engineering and Operations Research: Read Less [-]

IND ENG 190H Cases in Global Innovation 1 Unit
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2011
This course is designed primarily for upper-level undergraduate and graduate students interested in examining the major challenges and success factors entrepreneurs and innovators face in globalizing a company, product, or service. Over the duration of this course, students will examine case studies of early, mid-stage, and large-scale enterprises as they seek to start a new venture, introduce a new product or service, or capitalize on global economic trends to enhance their existing business. The course content exposes students interested in internationally oriented careers to the strategic thinking involved in international engagement and expansion. Cases will include both U.S. companies seeking to enter emerging markets and emerging market companies looking to expand within their own nations or into markets in developed nations. The course is focused on intensive study of actual business situations through rigorous case-study analysis.
Cases in Global Innovation: Read More [+]

Rules & Requirements

Prerequisites: Junior or Senior standing

Hours & Format

Fall and/or spring: 8 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Cases in Global Innovation: Read Less [-]
IND ENG 190I Cases in Global Innovation:  
China 1 Unit
Offered through: Industrial Engin and Oper Research  
Terms offered: Prior to 2007  
This course is designed primarily for upper-level undergraduate and graduate students interested in examining the major challenges and success factors entrepreneurs and innovators face in globalizing a company product or service, with a focus on China. Over the duration of this course, students will examine case studies of foreign companies seeking to start a new venture, introduce a new product or service to the China market, or domestic Chinese companies seeking to adapt a U.S. or western business model to the China market. The course content exposes students interested in internationally oriented careers to the strategic thinking involved in international engagement and expansion and the particularities of the China market and their contrast with the U.S. market. The course is focused around intensive study of actual business situations through rigorous case-study analysis and the course size is limited to 30.  
Cases in Global Innovation: China: Read More [+]

Rules & Requirements

Prerequisites: Junior or senior standing. Recommended, but not required to be taken after or along with Engineering 198

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructor: Sidhu

Cases in Global Innovation: China: Read Less [-]

IND ENG 190K Cases in Global Innovation:  
South Asia 1 Unit
Offered through: Industrial Engin and Oper Research  
Terms offered: Prior to 2007  
This course is designed primarily for upper-level undergraduate and graduate students interested in examining the major challenges and success factors entrepreneurs and innovators face in conducting business, globalizing a company product or service, or investing in South Asia. Over the duration of this course, students will examine case studies of foreign companies seeking to start a new venture, introduce a new product or service to the South Asian market, or South Asian companies seeking to adapt a U.S or western business model. The course will put this into the larger context of the political, economic, and social climate in several South Asian countries and explore the constraints to doing business, as well as the policy changes that have allowed for a more conducive business environment.  
Cases in Global Innovation: South Asia: Read More [+]

Rules & Requirements

Prerequisites: Junior or senior standing. Recommended but not required to be taken after or along with Engineering 198

Hours & Format

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

Additional Details

Subject/Course Level: Industrial Engin and Oper Research/Undergraduate

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

Instructor: Sidhu

Cases in Global Innovation: South Asia: Read Less [-]
IND ENG 191 Technology Entrepreneurship 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
This course explores key entrepreneurial concepts relevant to the high-technology world. Topics include the entrepreneurial perspective, start-up strategies, business idea evaluation, business plan writing, introduction to entrepreneurial finance and venture capital, managing growth, and delivering innovative products. This course prepares technical and business minded students for careers focused on entrepreneurship, intrapreneurship, and high technology. Students undertake intensive study of actual business situations through rigorous case-study analysis. This course can not be used to fulfill any engineering requirement (engineering units, courses, technical electives, or otherwise).

Rules & Requirements

Prerequisites: Junior or senior standing
Credit Restrictions: Students will receive no credit for 191 after taking 190A prior to fall 2009.

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Final exam not required.
Instructor: Sidhu

IND ENG 192 Berkeley Method of Entrepreneurship Bootcamp 2 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Fall 2017
This course offers the opportunity to understand the Berkeley Method of Entrepreneurship (BME) in an intensive format. The BME curriculum conveys the latest approaches for training global technology entrepreneurs. This method leverages insights on strategy, tactics, culture, and psychology with an accompanying entrepreneurial infrastructure. The curriculum is structured to provide an optimal global entrepreneurship experience from real life experiences.

Objectives Outcomes

Course Objectives: * To understand and make use of the value of diversity in idea generation and new venture creation. Student should become aware of the infrastructure available through UC Berkeley that support them in developing new ventures. To understand common tactics in starting new ventures including a lean learning cycle.
To understand the mindset of an entrepreneur, including the soft skills, behaviors, and psychological factors most likely to be needed to develop a new venture.

Student Learning Outcomes: Students should be able to consider a greater number of ideas for global entrepreneurship by observing the effect of background diversity in the class. Students should be able to follow a process of idea generation, rapid prototyping / venture story development, attraction of stakeholders, data collection, and hypothesis testing and regeneration.
Students should become aware of the mindset and behaviour required for entreprenurship and be able to reinforce some of these behaviours (eg rejection tolerance, comfort with failing or being wrong, inductive learning, venture story telling/communication abilities) through excercizes in the program.

Hours & Format
Fall and/or spring: 1 weeks - 30 hours of lecture and 20 hours of discussion per week
Summer: 3 weeks - 30 hours of lecture and 20 hours of discussion per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Letter grade. Alternative to final exam.
Instructors: Sidhu, Ikhlaq
IND ENG 195 A. Richard Newton Lecture Series 1 Unit
Offered through: Industrial Engin and Oper Research
Terms offered: Spring 2018, Fall 2017, Spring 2017
This lecture series serves as an entry point for undergraduate and graduate curriculum sequences in entrepreneurship and innovation. The series, established in 2005, is named in honor of A. Richard Newton, a visionary technology industry leader and late dean of the University of California Berkeley College of Engineering. The course features a selection of high-level industry speakers who share their insights on industry developments, leadership, and innovation based on their careers.

A. Richard Newton Lecture Series: Read More [+]

Rules & Requirements
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 1.5 hours of colloquium per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Alternative to final exam.
Instructor: Sidhu

A. Richard Newton Lecture Series: Read Less [-]

IND ENG H196A Operations Research and Management Science Honors Thesis 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Prior to 2007
Individual study and research for at least one academic year on a special problem approved by a member of the faculty; preparation of the thesis on broader aspects of the work.

Operations Research and Management Science Honors Thesis: Read More [+]

Rules & Requirements
Prerequisites: Open only to students in the honors program
Credit Restrictions: Course may be repeated for credit with consent of instructor.
Repeat rules: Course may be repeated for credit with instructor consent. Course may be repeated for credit when topic changes.

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of independent study per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam required.

Operations Research and Management Science Honors Thesis: Read Less [-]

IND ENG H196B Operations Research and Management Science Honors Thesis 3 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Prior to 2007
Individual study and research for at least one academic year on a special problem approved by a member of the faculty; preparation of the thesis on broader aspects of the work.

Operations Research and Management Science Honors Thesis: Read More [+]

Rules & Requirements
Prerequisites: Open only to students in the honors program
Repeat rules: Course may be repeated for credit with instructor consent. Course may be repeated for credit when topic changes.

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of independent study per week

Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam required.

Operations Research and Management Science Honors Thesis: Read Less [-]
IND ENG 197 Undergraduate Field Research in Industrial Engineering 1 - 12 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Summer 2018 10 Week Session, Summer 2017 10 Week Session, Summer 2016 10 Week Session
Students work on a field project under the supervision of a faculty member. Course does not satisfy unit or residence requirements for bachelor's degree.
Undergraduate Field Research in Industrial Engineering: Read More [+]
Rules & Requirements
Prerequisites: Completion of two semesters of coursework
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1-12 hours of fieldwork per week
Summer:
6 weeks - 2.5-30 hours of fieldwork per week
8 weeks - 1.5-22.5 hours of fieldwork per week
10 weeks - 1.5-18 hours of fieldwork per week
Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Undergraduate Field Research in Industrial Engineering: Read Less [-]

IND ENG 198 Directed Group Studies for Advanced Undergraduates 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Fall 2016, Spring 2016, Fall 2015
Group studies of selected topics. Semester course unit value and contact hours will have a one-to-one ratio.
Directed Group Studies for Advanced Undergraduates: Read More [+]
Rules & Requirements
Prerequisites: Senior standing in Engineering
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: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Directed Group Studies for Advanced Undergraduates: Read Less [-]

IND ENG 199 Supervised Independent Study 1 - 4 Units
Offered through: Industrial Engin and Oper Research
Terms offered: Summer 2016 10 Week Session, Summer 2015 10 Week Session, Spring 2015
Supervised independent study. Enrollment restrictions apply.
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 - 2.5-10 hours of independent study per week
8 weeks - 2-7.5 hours of independent study per week
10 weeks - 1.5-6 hours of independent study per week
Additional Details
Subject/Course Level: Industrial Engin and Oper Research/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Supervised Independent Study: Read Less [-]

Business Administration
UGBA C5 Introduction to Entrepreneurship 2 Units
Offered through: Business Administration
Terms offered: Spring 2017, Fall 2015, Fall 2014
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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
This course provides an introduction to the study of the modern business enterprise. The course is taught in five modules, the order of which may vary from semester to semester. The first examines the role and governance of business enterprise in a market economy. The second concentrates on financial issues, while the third looks at the problems of managing people in organizations. The fourth examines product pricing, marketing, and distribution issues and the last concentrates on the international business environment.
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. Final exam not required.
Formerly known as: Business Administration 10

UGBA 24 Freshman Seminars 1 Unit
Offered through: Business Administration
Terms offered: Fall 2013, Spring 2007, Spring 2005
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. 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.

Formerly known as: Freshman Seminars 24

UGBA 39D Freshman/Sophomore Seminar 2 - 4 Units
Offered through: Business Administration
Terms offered: Spring 2008, Fall 2007
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

UGBA 39E Freshman/Sophomore Seminar 2 - 4 Units
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2016, Fall 2015
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
UGBA 96 Lower Division Special Topics in Business Administration 1 - 4 Units
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
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.

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.

UGBA 98 Directed Group Study 1 - 4 Units
Offered through: Business Administration
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.

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
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: Offered for pass/not pass grade only. Final exam not required.
Formerly known as: Business Administration 98

UGBA 100 Business Communication 2 Units
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
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.

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.
UGBA 101A Microeconomic Analysis for Business Decisions 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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.
Rules & Requirements
Prerequisites: Economics 1, Mathematics 1A or 16A, Statistics 21, or equivalents
Credit Restrictions: Students will receive no credit for Undergraduate Business Administration 101A after completing Economics 100A or 101A, Environmental Economics and Policy 100 or International and Area Studies 106. A deficient grade in Economics 100A, 101A, Environmental Economics and Policy 100, or International and Area Studies 106 may be repeated by taking 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
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
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Summer 2018 Second 6 Week Session, Spring 2018
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.
Rules & Requirements
Prerequisites: Economics 1, Mathematics 1A or 16A, Statistics 21, or equivalents
Credit Restrictions: Students will receive no credit for Undergraduate Business Administration 101B after completing Economics 100B or 101B or International and Area Studies 107. A deficient grade in Economics 100B, 101B, or International and Area Studies 107 may be repeated by taking Undergraduate Business Administration 101B.
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.
Formerly known as: Business Administration 111
Macroeconomic Analysis for Business Decisions: Read Less [-]
UGBA 102A Introduction to Financial Accounting 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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.
Introduction to Financial Accounting: 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 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 not required.
Formerly known as: Business Administration 120
Introduction to Financial Accounting: Read Less [-]

UGBA 102B Introduction to Managerial Accounting 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Fall 2017
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.
Introduction to 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 - 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.
Formerly known as: Business Administration 120
Introduction to Managerial Accounting: Read Less [-]

UGBA W102A Financial Accounting 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session
The identification, measurement, and reporting of financial effects of events on enterprises, with a particular emphasis on business organization. Preparation and interpretation of balance sheets, income statements, and statements of cash flows.
Financial Accounting: Read More [+]

Hours & Format
Summer: 6 weeks - 7.5 hours of web-based lecture per week
Online: This is an online course.

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Financial Accounting: Read Less [-]

UGBA 103 Introduction to Finance 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Summer 2018 Second 6 Week Session, Spring 2018
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 - 8 hours of lecture and 2 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.
Formerly known as: Business Administration 130
Introduction to Finance: Read Less [-]
UGBA 104 Analytic Decision Modeling Using Spreadsheets 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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.

Rules & Requirements
Prerequisites: Mathematics 1B or 16B, Statistics 21, or equivalents

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week
Summer: 6 weeks - 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.

UGBA 105 Leading People 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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.

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 - 3 hours of lecture per week
Summer:
6 weeks - 8 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.

UGBA 106 Marketing 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Summer 2018 Second 6 Week Session, Spring 2018
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.

Rules & Requirements

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.
UGBA 107 The Social, Political, and Ethical Environment of Business 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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 113 Managerial Economics 3 Units
Offered through: Business Administration
Terms offered: Fall 2010, Fall 2009
Analysis of the theory and practice of decision-making in business firms, utilizing the concepts and techniques of managerial economics. The business decisions to be investigated include pricing policies, internal transfer pricing, and various choices under uncertainty.
Managerial Economics: Read More [+]

Rules & Requirements
Prerequisites: 101A-101B or equivalents

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 113
Managerial Economics: Read Less [-]

UGBA 115 Competitive Strategy 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 3 Week Session, Spring 2018, Fall 2017
This course draws upon theories and frameworks from industrial organization economics, game theory, and resource-based views to address the unique challenges confronted by senior executives of organizations. The focus is strategies for competitive advantage at an organizational level. Topics include industry and competitor analysis, horizontal and vertical boundaries of the firm, strategic positioning, internal competencies, and dynamic capabilities.
Competitive Strategy: Read More [+]

Rules & Requirements
Prerequisites: 101A or equivalent

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week
Summer:
3 weeks - 15 hours of lecture per week
6 weeks - 7.5 hours of lecture per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam not required.

Competitive Strategy: Read Less [-]

UGBA 117 Special Topics in Economic Analysis and Policy 1 - 4 Units
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Fall 2013
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
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Summer 2017 Second 6 Week Session
This course will develop models for understanding the economic causes and effects of international trade, will investigate the effects of economic policies that inhibit trade, and will examine the political economy of trade. By integrating the findings of the latest theoretical and empirical research in international economics, this course help students learn how to explore the current political debates in the U.S. and elsewhere regarding the benefits and costs of international trade.
International Trade: Read More [+]

Rules & Requirements
Prerequisites: Undergraduate Business Administration 101A or equivalent
Credit Restrictions: Students will receive no credit for Undergraduate Business Administration 118 after taking Economics 181 or Economics C181/Environmental Economics and Policy C181.

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week
Summer: 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

International Trade: Read Less [-]

UGBA 119 Leading Strategy Implementation 3 Units
Offered through: Business Administration
Class format consists of lectures, experiential exercises, student presentations, and case discussions. This course will cover the concepts and techniques required for successful implementation of business strategies with a particular focus on the role of effective leadership in leading strategic change.
Leading Strategy Implementation: Read More [+]

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week
Summer: 10 weeks - 4.5 hours of lecture per week
Online: This is an online course.

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam not required.
Formerly known as: Business Administration 190
Leading Strategy Implementation: Read Less [-]

UGBA 120AA Intermediate Financial Accounting 1 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Fall 2017, Summer 2017 First 6 Week Session
This Course introduces the student to concepts, theory and applications of financial accounting. The topics covered include accrual accounting concepts, financial statement analysis, inventory valuations, capital assets and their corresponding depreciation and impairment. Attention is given to examples on current reporting practices and to the study of reporting requirements promulgated by the Financial Accounting Standards Board ("FASB") with comparison to the International Accounting Standards Board ("IASB")
Intermediate Financial Accounting 1: Read More [+]

Rules & Requirements
Prerequisites: 102A

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week
Summer: 6 weeks - 7.5 hours of lecture and 5 hours of discussion per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

Intermediate Financial Accounting 1: Read Less [-]
UGBA 120AB Intermediate Financial Accounting 2 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Summer 2017 Second 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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2016, Spring 2016
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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Fall 2016
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
Offered through: Business Administration
Terms offered: Fall 2017
This course examines how accounting in the financial services industry – banking, insurance, 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.

Rules & Requirements
Prerequisites: 120AA

UGBA W125 Professional Judgment in Accounting 3 Units
Offered through: Business Administration
Terms offered: Prior to 2007
An online course in reviewing auditing principles with a simulated audit experience over the complex areas of estimates and judgments.

Rules & Requirements
Prerequisites: Preferable to have auditing completed or in progress. Must have intermediate accounting

UGBA 126 Auditing 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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.

Rules & Requirements
Prerequisites: 120AA (120AB and 120B recommended)

UGBA 127 Special Topics in Accounting 1 - 4 Units
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
A variety of topics in accounting with emphasis on current problems and research.

Rules & Requirements
Prerequisites: 102A
UGBA 128 Strategic Cost Management 3 Units
Offered through: Business Administration
Terms offered: Fall 2017, Spring 2015, Fall 2012
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.

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.

UGBA 129 Financial Reporting for Complex Transactions 3 Units
Offered through: Business Administration
Terms offered: Spring 2014
This course develops sophisticated users of financial information. Students will enhance their ability to understand the economic essence of important complex business transactions, focusing on topics related to major financial events in the lifecycle of an organization (IPOs, mergers and acquisitions, bankruptcies, etc.) Students' ability to identify and understand the financial reporting and tax issues related to these business dealings and accounting situations will dramatically increase. Many fascinating transactions will be examined in an effort to understand the economic underpinnings of the transactions and their accounting representation in the financial statements.

Rules & Requirements
Prerequisites: UGBA 120A

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week
Summer: 8 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.

UGBA 131 Corporate Finance and Financial Statement Analysis 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Fall 2017
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.

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

UGBA 132 Financial Institutions and Markets 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Summer 2017 First 6 Week Session, Summer 2016 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.

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
UGBA 133 Investments 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Summer 2018 Second 6 Week Session, Fall 2017
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
Offered through: Business Administration
Terms offered: Not yet offered
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 [+]

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 136F Behavioral Finance 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Summer 2017 Second 6 Week Session, Summer 2016 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
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Summer 2017 Second 6 Week Session
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 3 Units
Offered through: Business Administration
Terms offered: Spring 2017, Spring 2016, Spring 2015
A survey of the concepts and methodologies for management control of production and operations systems. Topics include inventory control, material requirements planning for multistage production systems, aggregate planning, scheduling, and production distribution.
Production and Operations Management: Read More [+]
Rules & Requirements
Prerequisites: 104 or equivalent, or consent of instructor

UGBA 143 Game Theory and Business Decisions 3 Units
Offered through: Business Administration
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

UGBA 147 Special Topics in Operations and Information Technology Management 1 - 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Summer 2017 First 6 Week Session
A variety of topics in manufacturing and information technology with emphasis on current problems and research.
Special Topics in Operations and Information Technology Management: Read More [+]
Rules & Requirements
Repeat rules: Course may be repeated for credit without restriction.

UGBA 151 Management of Human Resources 3 Units
Offered through: Business Administration
Terms offered: Fall 2016, Summer 2016 10 Week Session, Summer 2016 First 6 Week Session
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
UGBA 152 Negotiation and Conflict Resolution 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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 2 or 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Fall 2017, Summer 2017 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 - 2-3 hours of lecture per week
Summer: 6 weeks - 7.5-10 hours of lecture per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

UGBA 155 Leadership 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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

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 156AC Diversity in the Workplace 3 Units
Offered through: Business Administration
Terms offered: Fall 2013, Spring 2013, Fall 2011
This course introduces students to various theories on diversity in business and the importance of human capital equity and inclusion to organizations. Students will engage in community-based projects to be more conscious of the social impact of positive human relations and to foster equity, social justice, and civic responsibility. Emphasis placed on experiential learning with issues of race, ethnicity, gender, generational status, spirituality, sexual orientation, and physical and mental ability.
Diversity in the Workplace: Read More

Rules & Requirements
Prerequisites: 10, 105, 151 recommended
Requirements this course satisfies: Satisfies the American Cultures requirement

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.
Diversity in the Workplace: Read Less
UGBA 157 Special Topics in the Management of Organizations 1 - 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Spring 2017
A variety of topics in organizational behavior and industrial relations with emphasis on current problems and research.
Special Topics in the Management of Organizations: Read More [+]
Rules & Requirements
Prerequisites: 105
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1-4 hours of lecture per week
Summer: 6 weeks - 2.5-10 hours of lecture per week
Additional Details
Subject/Course Level: Undergrad. Business Administration/ Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Formerly known as: Business Administration 159
Special Topics in the Management of Organizations: Read Less [-]

UGBA 160 Consumer Behavior 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Summer 2017 First 6 Week Session
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.
Consumer Behavior: 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.
Marketing Research: Data and Analytics: Read Less [-]

UGBA 161 Marketing Research: Data and Analytics 3 Units
Offered through: Business Administration
Terms offered: Spring 2017, Fall 2014, Fall 2012
Marketing research objectives: qualitative research, surveys, experiments, sampling, data analysis.
Marketing Research: Data and Analytics: 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.
Marketing Research: Data and Analytics: Read Less [-]

UGBA 162 Brand Management and Strategy 3 Units
Offered through: Business Administration
Terms offered: Fall 2017, Fall 2016, Fall 2015
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
Offered through: Business Administration
Terms offered: Fall 2017, Fall 2016
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
Offered through: Business Administration
Terms offered: Not yet offered
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. Final exam required.  
Formerly known as: Business Administration 165  
Advertising Strategy: Read Less [-]  

UGBA 165 Advertising Strategy 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Fall 2017, Summer 2017 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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
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
Offered through: Business Administration
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

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Alternative to final exam.

International Marketing: Read Less [-]

UGBA 169 Pricing 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Summer 2017 Second 6 Week Session, Spring 2017
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 not required.

Pricing: Read Less [-]

UGBA 170 Ethical Leadership in Business 2 Units
Offered through: Business Administration
Terms offered: Spring 2017, Spring 2016, Spring 2015
The purpose of this class is to enhance the ability of students to anticipate, critically analyze, and appropriately respond to the wide-range social and ethical issues that challenge managers as well as individuals in their roles as citizens, consumers, investors, and employees. Instruction is based on lectures and case analysis, supplemented by topical and philosophical articles and essays.

Ethical Leadership 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.

Ethical Leadership in Business: Read Less [-]

UGBA C172 History of American Business 3 Units
Offered through: Business Administration
Terms offered: Spring 2017, Spring 2016, Spring 2015
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
Also listed as: AMERSTD C172
History of American Business: Read Less [-]
UGBA 175 Legal Aspects of Management 3 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Fall 2017, Summer 2017 Second 6 Week Session
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
Offered through: Business Administration
Terms offered: Fall 2017, Fall 2016
Introduces students to the conceptual issues and formidable practical challenges involved in the profession of corporate and non-profit public relations. Students build on previous coursework in oral and written business communications, brand management, governance and strategy. They learn how to work in teams to craft innovative and effective media responses to external stakeholders (e.g., customers, clients, donors, regulators, lawyers, public officials, the general public) when the organizations for which they work face the need to manage change (e.g. a new product introduction, the entrance of a new competitor) or deal with an unanticipated crisis.
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.
Formerly known as: Business Administration 175
Legal Aspects of Management: Read Less [-]

UGBA 177 Special Topics in Business and Public Policy 1 - 4 Units
Offered through: Business Administration
Terms offered: Spring 2016, Fall 2015, Fall 2014
A variety of topics in business and public policy with emphasis on current problems and research.

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
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Spring 2018, Fall 2017
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.

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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
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.

UGBA 180 Introduction to Real Estate and Urban Land Economics 3 Units
Offered through: Business Administration
Terms offered: Spring 2018, Spring 2017, Fall 2016
The nature of real property; market analysis; construction cycles; mortgage lending; equity investment; metropolitan growth; urban land use; real property valuation; public policies.
Introduction to Real Estate and Urban Land Economics: Read More [+]

Rules & Requirements
Prerequisites: Economics 1, Mathematics 16A or 1A, or equivalents

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week
Summer: 6 weeks - 7.5 hours of lecture per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Formerly known as: Business Administration 180
Introduction to Real Estate and Urban Land Economics: Read Less [-]

UGBA 183 Introduction to Real Estate Finance 3 Units
Offered through: Business Administration
Terms offered: Spring 2018, Spring 2016, Spring 2015
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
Offered through: Business Administration
Terms offered: Spring 2016, Spring 2015, Spring 2014
This course examines how market forces influence the development of cities and the development and pricing of real estate assets. Topics include city formation; city size; land rent and land use; the operation of residential, commercial and industrial property markets; and the impacts of government policies, including the provision of public services, the imposition property taxes and fees, transportation pricing and investment, and land use regulations.
Introduction to Real Estate Finance: 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.
Formerly known as: Business Administration 180

Introduction to Real Estate and Urban Land Economics: Read Less [-]
UGBA 187 Special Topics in Real Estate Economics and Finance 1 - 4 Units
Offered through: Business Administration
Terms offered: Fall 2010, Fall 2009
A variety of topics in real estate economics and finance with emphasis on current problems and research.

Rules & Requirements
Repeat rules: Course may be repeated for credit when topic changes. 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

UGBA 190T Special Topics in Innovation and Design 1 - 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Fall 2017
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.

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

UGBA 190S Strategy for the Information Technology Firm 3 Units
Offered through: Business Administration
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 - 3 hours of lecture per week
Summer: 8 weeks - 6 hours of lecture per week

UGBA 190V Corporate Strategy in Telecommunications and Media 2 Units
Offered through: Business Administration
Terms offered: Prior to 2007
This course is an intensive and in-depth study of the rapidly evolving global telecommunications and media industry viewed through the perspective of an entrepreneur/innovator (whether at a start-up or an established company) attempting to introduce a new product or service into the market. The course is fundamentally about strategy and general management, but will draw from a variety of disciplines including public policy, law, marketing, economics, finance, engineering, and physics to identify the key issues, analyze the potential options and understand the consequences of the decisions made by management.

Corporate Strategy in Telecommunications and Media: 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
UGBA 191C Communication for Leaders 2
Units
Offered through: Business Administration
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
Offered through: Business Administration
Terms offered: Fall 2017, Fall 2016, Fall 2015
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.
Improv ical 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.
Improv ical Leadership: Read Less [-]
UGBA 192A Leading Nonprofit and Social Enterprises 3 Units
Offered through: Business Administration
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 [+]
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
Offered through: Business Administration
Terms offered: Fall 2017, Fall 2016
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
Offered through: Business Administration
Terms offered: Spring 2018, Spring 2017
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 192L Applied Impact Evaluation 2 Units
Offered through: Business Administration
Terms offered: Prior to 2007
This course covers the methods and applications of impact evaluations, which is the science of measuring the causal impact of a program or policy on outcomes of interest. At its essence, impact evaluation is about generating evidence on which policies work, and which don't. This subject matter should appeal to three main audiences: (1) those in decision-making positions, such as policy makers and business leaders, and need to consume the information generated from impact evaluations to make informed evidence-based decisions, (2) project managers, development practitioners and business managers who commission impact evaluations and (3) researchers who actually design and implement impact evaluations.
Applied Impact Evaluation: Read More [+]
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week
Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Alternative to final exam.
Applied Impact Evaluation: Read Less [-]
UGBA 192N Topics in Social Sector Leadership 1 - 5 Units
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
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. 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
Offered through: Business Administration
Terms offered: Fall 2016, Fall 2014, Fall 2012
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 192T Topics in Corporate Social Responsibility 1 - 4 Units
Offered through: Business Administration
Terms offered: Summer 2018 First 6 Week Session, Spring 2018, Spring 2017
Advanced study in the field of corporate social responsibility that will address current and emerging issues. Topics will vary with each offering and will be announced at the beginning of each term.
Topics in Corporate Social Responsibility: Read More [+]

Rules & Requirements
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 1-4 hours of lecture per week
Summer: 6 weeks - 2.5-10 hours of lecture per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Topics in Corporate Social Responsibility: Read Less [-]

UGBA 193B Energy & Civilization 4 Units
Offered through: Business Administration
Terms offered: Fall 2017, Fall 2016
Energy is one of the main drivers of civilization. Today we are at the precipice of what many hope will be a major paradigm shift in energy production and use. Two transitions are needed. On the one hand, we must find ways to extend the benefits of our existing energy system to the impoverished people living in the developing world while continuing to provide these benefits to the people of the developed world. On the other hand, we must completely overhaul the existing system to fight climate change and other forms of air and water pollution. Are these shifts truly within our reach? Can we achieve both simultaneously? If so, how? This Big Ideas course will grapple with these questions using an interdisciplinary systems approach.
Energy & Civilization: Read More [+]

Rules & Requirements
Credit Restrictions: Students who take UGBA 193B will not receive credit for L&S 126.

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

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Energy & Civilization: Read Less [-]
UGBA 193C Curricular Practical Training for International Students 0.0 Units
Offered through: Business Administration
Terms offered: Summer 2014 10 Week Session, Summer 2013 10 Week Session, Summer 2012 10 Week Session
This is a zero-unit internship course for non-immigrant international students participating in internships under the Curricular Practical Training program. Requires a paper exploring how the theoretical constructs learned in UGBA courses were applied during the internship. Curricular Practical Training for International Students: Read More [+]
Rules & Requirements
Prerequisites: International students only
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of internship per week
Summer: 6 weeks - 0 hours of internship per week
Additional Details
Subject/Course Level: Undergrad. Business Administration/ Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam required.
Curricular Practical Training for International Students: Read Less [-]

UGBA 193I Business Abroad 4 - 6 Units
Offered through: Business Administration
Terms offered: Summer 2018 Second 6 Week Session, Summer 2017 Second 6 Week Session, Spring 2015
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. 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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Fall 2016
This is a speakers series course designed to give students insights from practitioners into complex issues facing American business leaders. Each week a guest speaker will discuss an issue related to a particular theme, ranging from corporate governance to the social responsibilities of business. Students will be challenged to synthesize, question, and extend those insights under the guidance of the instructor. Undergraduate Colloquium on Business Topics: Read More [+]
Rules & Requirements
Repeat rules: Course may be repeated for credit when topic changes.
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture per week
Summer: 6 weeks - 2.5 hours of lecture per week
Additional Details
Subject/Course Level: Undergrad. Business Administration/ Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam required.
Undergraduate Colloquium on Business Topics: Read Less [-]

UGBA 195A Entrepreneurship 3 Units
Offered through: Business Administration
Do you have an idea for a new business, but want to learn how to more fully develop this idea? Would you like to receive funding for your business idea, but lack a framework to ask for capital? This course takes students through the new venture process using a business plan as the main deliverable. A well-written business plan sets key milestones and indicates the resources needed to achieve them, in an increasingly complex business environment. Through the planning process that tightly links market and financial planning a business plan creates a set of standards to which investors and teammates can evaluate actual performance, laying the foundation for an “operating plan” once the business is launched. Entrepreneurship: Read More [+]
Hours & Format
Fall and/or spring: 15 weeks - 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.
Entrepreneurship: Read Less [-]
UGBA 195P Entrepreneurship: How to Successfully start a New Business 3 Units
Offered through: Business Administration
Terms offered: Fall 2017, Fall 2016, Fall 2015
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
Offered through: Business Administration
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
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Spring 2017
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.
Course may be repeated for credit when topic changes.

Hours & Format
Fall and/or spring: 15 weeks - 1-3 hours of lecture per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

Topics in Entrepreneurship: Read Less [-]

UGBA 196 Special Topics in Business Administration 1 - 4 Units
Offered through: Business Administration
Terms offered: Spring 2018, Fall 2017, Summer 2017 Second 6 Week Session
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.
Course may be repeated for credit when topic changes.

Hours & Format
Fall and/or spring: 15 weeks - 1-4 hours of lecture per week
Summer:
6 weeks - 2.5-10 hours of lecture per week
10 weeks - 2-4 hours of lecture per week

Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Formerly known as: Business Administration 196

Special Topics in Business Administration: Read Less [-]
UGBA 198 Directed Study 1 - 4 Units
Offered through: Business Administration
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
Offered through: Business Administration
Terms offered: Spring 2015, Spring 2014, Fall 2013
Enrollment restrictions apply.
Supervised Independent Study and Research: Read More [+]
Rules & Requirements
Prerequisites: Consent of instructor
Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Summer:
6 weeks - 1-4 hours of independent study per week
8 weeks - 1-4 hours of independent study per week
Additional Details
Subject/Course Level: Undergrad. Business Administration/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Formerly known as: Business Administration 199
Supervised Independent Study and Research: Read Less [-]
  • Industrial Engineering and Operations Research Faculty (p. )
  • Business Administration Faculty (p. )
+ Indicates this faculty member is the recipient of the Distinguished Teaching Award.

Industrial Engineering and Operations Research Faculty
Ilan Adler, Professor. Financial engineering, optimization theory, combinatorial probability models.
Research Profile (http://vcresearch.berkeley.edu/node/13998)

Anil Jayanti Aswani, Assistant Professor.

Alper Atamturk, Professor. Logistics, integer programming, computational optimization, robust optimization.
Research Profile (http://vcresearch.berkeley.edu/node/13999)

Laurent El Ghaoui, Professor. Decision-making under uncertainty, convex optimization, robust solutions, semidefinite programming, exhaustive simulation.
Research Profile (http://vcresearch.berkeley.edu/node/15019)

Lee Fleming, Professor. Invention, innovation, patents, big data, leadership.
Research Profile (http://vcresearch.berkeley.edu/node/16450)

Ken Goldberg, Professor. Robotics, art, social media, new media, automation.
Research Profile (http://vcresearch.berkeley.edu/node/14251)
Xin Guo, Professor. Financial engineering, industrial engineering and operations, stochastic processes and applications, stochastic control, semi-martingale and filtration expansions, credit risk, (ir)reversible investment.
Research Profile (http://vcresearch.berkeley.edu/node/14760)

Dorit S. Hochbaum, Professor. Data mining, integer programming, discrete optimization, network flow techniques, clustering, image segmentation, machine vision, pattern recognition.
Research Profile (http://vcresearch.berkeley.edu/node/14852)

Philip M. Kaminsky, Professor. Biotechnology, logistics, distribution, algorithms, planning, optimization, control, manufacturing, semiconductors, scheduling, biomanufacturing, probabilistic methods, production scheduling, supply chain management, operations management, logistic.
Research Profile (http://vcresearch.berkeley.edu/node/14349)

Javad Lavaei, Assistant Professor.

Robert C. Leachman, Professor. Logistics, manufacturing, semiconductors, scheduling, supply chain systems, dynamic production models, production planning and scheduling.
Research Profile (http://vcresearch.berkeley.edu/node/14996)

Shmuel S. Oren, Professor. Economics, algorithms, financial engineering, risk management, planning, optimization, operation of electric power systems, market based coordination of network systems, trading instruments.
Research Profile (http://vcresearch.berkeley.edu/node/15364)

Research Profile (http://vcresearch.berkeley.edu/node/14207)

Rhonda L. Righter, Professor. Modeling, optimization, stochastic systems, systems with uncertainty.
Research Profile (http://vcresearch.berkeley.edu/node/14207)

Lee W. Schruben, Professor. Health care systems, simulation, optimization of simulation system response, foundations of simulation modeling, supply chains, experimental designs, biopharmaceuticals, Production.
Research Profile (http://vcresearch.berkeley.edu/node/15313)

Zuo-Jun Shen, Professor. Logistics, supply chain design and management, inventory management, auction mechanism design.
Research Profile (http://vcresearch.berkeley.edu/node/14218)

Ikhlao Sidhu, Adjunct Professor. Technology management, industrial engineering and operations, technology commercialization, interdisciplinary engineering.
Research Profile (http://vcresearch.berkeley.edu/node/15449)

Candace Yano, Professor. Inventory control, production planning, distribution systems planning, integrated production-quality models, integrated manufacturing-marketing models.
Research Profile (http://vcresearch.berkeley.edu/node/15643)

Lecturers
Solomon Darwin, Lecturer.
Nicholas L. Gunther, Lecturer.

Han Jin, Lecturer.
Tal Lavian, Lecturer.
David Law, Lecturer.
Ronald Lesniak, Lecturer.
Mehdi Maghsoudnia, Lecturer.
Deepak Rajan, Lecturer.
Kenneth Sandy, Lecturer.
Ken Singer, Lecturer.
Naeem Zafar, Lecturer.

Emeritus Faculty
Richard E. Barlow, Professor Emeritus. Industrial engineering and operations, reliability theory, statistical data analysis, Bayesian probability modeling.
Research Profile (http://vcresearch.berkeley.edu/node/14126)

Stuart E. Dreyfus, Professor Emeritus. Neural networks, dynamic programming, limits of operations research modeling, cognitive ergonomics.
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Research Profile (http://vcresearch.berkeley.edu/node/14264)

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Sheldon M. Ross, Professor Emeritus. Financial engineering, simulations, stochastics, statistical analysis.
Research Profile (http://vcresearch.berkeley.edu/node/15287)

J. George Shanthikumar, Professor Emeritus. Scheduling, production system modelling & analysis, queueing theory & applications, reliability & probability theory, sequencing, simulation methodology, stochastic processes & modelling.
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Ronald W. Wolff, Professor Emeritus. Stochastic processes, queuing theory, queuing network, transmission systems.
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Business Administration Faculty
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Homa Bahrami, Senior Continuing Lecturer.

Cristina Banks, Senior Continuing Lecturer.

Sara Beckman, Senior Lecturer SOE.

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Rada Brooks, Continuing Lecturer.

David Charron, Continuing Lecturer.

John Danner, Continuing Lecturer.

Timothy Dayonot, Senior Continuing Lecturer.

Stephen Etter, Continuing Lecturer.

William Falik, Continuing Lecturer.

William Fanning, Continuing Lecturer.

C. Sean Foote, Continuing Lecturer.

Ernest Gundling, Continuing Lecturer.

Lynne Heinrich, Continuing Lecturer.
Daniel Himelstein, Continuing Lecturer.

Andrew Isaacs, Senior Continuing Lecturer.

Arina Isaacson, Continuing Lecturer.

Gregory La Blanc, Continuing Lecturer.

Sumon Mazumdar, Continuing Lecturer.

Samuel Olesky, Continuing Lecturer.

Arturo Perez-Reyes, Continuing Lecturer.

John (Jack) Phillips, Continuing Lecturer.

Mark Rittenberg, Continuing Lecturer.

David Robinson, Senior Continuing Lecturer.

Alan Ross, Continuing Lecturer.

Holly Schroth, Senior Continuing Lecturer.

Frank Schultz, Continuing Lecturer.

Fred Selinger, Continuing Lecturer.

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Emeritus Faculty

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K. Roland Artle, Professor Emeritus.

Robert Cole, Professor Emeritus.

Robert Edelstein, Professor Emeritus.

Edwin Epstein, Professor Emeritus.

Joseph Garbarino, Professor Emeritus.

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Rashi Glazer, Professor Emeritus.

Nils Hakansson, Professor Emeritus.

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