Fiber Science

The requirements listed below pertain to all students matriculating in August 2018 and January 2019.

All of the following sections are required to be completed to graduate.

Courses in areas 1-15 must be taken for a Letter Grade.

<table>
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<th>Overall Credits (REQUIRED)</th>
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<td>Total: 120 credits</td>
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1. **Fiber Science Core Courses**  (19 credits)
   Take all of the following:
   - FSAD 1350 Fibers, Fabrics, and Finishes
   - FSAD 1360 Fiber and Yarn Analysis Laboratory
   - FSAD 2370 Structural Fabric Design
   - FSAD 3320 Product Quality Assessment
   - FSAD 3350 Fiber Science
   - FSAD 4360 Fiber Chemistry
   - FSAD 4660 Textiles, Apparel, and Innovation

2. **FSAD Introductory Courses**  (3 credits)
   Choose one of the following:
   - FSAD 1250 Fashion, Art and Design Thinking
   - FSAD 2190 Fashion, Beauty and Society
   - FSAD 2310 Fashion Product Management
   - FSAD 3250 Color and Surface Design of Textiles

3. **FSAD Advanced level Course work**  (3 credits)
   Choose one of the following:
   - FSAD 4390 Biomedical Materials and Devices for Human Body Repair
   - FSAD 6160 Rheology of Solids: Dynamic Mechanical Analysis of Fibers and Polymers
   - FSAD 6200 Physical Properties of Fiber – Forming Polymers and Fibers
   - FSAD 6260 The Chemistry of Textile Finishes and Dyeing
   - FSAD 6390 Properties of Fibrous Systems
   - FSAD 6660 Fiber Formation: Theory and Practice

4. **Computer Science**  (3 credits)
   Choose one of the following:
   - CS 1110 Introduction to Computing Using Python
   - CS 1112 Introduction to Computing Using MATLAB
   - CS 1300 Introductory Design and Programming for the Web (also INFO 1300)
   - FSAD 1140 Introduction to Computer-Aided Design
   - **Note:** If you have a score of 5 on AP Computer Science, then you may take one of the following upper level course instead of CS 1110 or CS 1112:
   - CS 2110 Object-Oriented Programming and Data Structures
   - CS 2300 Intermediate Design and Programming for the Web
   - INFO 2950 Introduction to Data Science

5. **Introductory Chemistry**  (8 credits)
   Choose one of the following sequences:
   (a) CHEM 1560 and CHEM 2080 General Chemistry
   (b) CHEM 2070 and CHEM 2080 General Chemistry I and II
   (c) CHEM 2090 Engineering General Chemistry* and CHEM 2080 General Chemistry II
   (*requires written permission from the Chemistry Office of Undergraduate Studies)

6. **Organic Chemistry Lecture and Laboratory**  (8 credits)
   Take all of the following:
   - CHEM 3570 Introductory Organic Chemistry
   - CHEM 3580 Introductory Organic Chemistry
   - CHEM 2510 Introduction to Experimental Organic Chemistry
7. **Physics** *(8 credits)*
   Choose one of the following sequences:
   (a) PHYS 1101-1102 General Physics I and II
   (b) PHYS 1112-2213 Physics I: Mechanics & Heat and Physics II: Electromagnetism
   (c) PHYS 2207-2208 Fundamentals of Physics I and II

8. **Additional Science Sequence** *(6-8 credits)*
   Choose from one of the following sequences:

<table>
<thead>
<tr>
<th>Biology sequence</th>
<th>Design and Environmental Analysis sequence</th>
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<tr>
<td><strong>Biology sequence</strong></td>
<td>Choose two out of three from the following options:</td>
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<tr>
<td><strong>FSAD 1450 Introduction to Fashion Design AND</strong></td>
<td>DEA 1500 Introduction to Environmental Psychology</td>
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<td><strong>Choose one from the following options:</strong></td>
<td>DEA 2730 Human Centered Design Methods</td>
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<td>(a) <strong>FSAD 2660 Activewear Design and Product Development</strong></td>
<td>DEA 3510 Ergonomics and Anthropometrics</td>
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<td>(b) <strong>FSAD 3650 New Technologies for Fashion Design</strong></td>
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<tr>
<td>(c) <strong>FSAD 6900 Functional Aspects of Design and Clothing</strong></td>
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   | **Physical Chemistry sequence**                                                 | **Honors Physical Chemistry sequence**                                                                     | **Materials Chemistry sequence**                                                                            |
   | **CHEM 2870-2880 Introductory Physical Chemistry**                               | CHEM 3890 - 3900 Honors Physical Chemistry                                                                  | MSE 2610 Mechanical Properties of Materials: From Nanodevices to Superstructures AND                        |
   | **Design and Environmental Analysis sequence**                                   | **Materials Chemistry sequence**                                                                            |

9. **First Year Writing Seminars** *(6 credits)*
   Note: The 2 required first year writing seminar courses must be completed during the first two semesters at Cornell.

10. **Human Development or Psychology** *(3 credits)*
    Choose one of the following courses:
    HD 1150 Human Development: Infancy and Childhood
    HD 1170 Adolescence and Emerging Adulthood
    PSYCH 1101 Introduction to Psychology

11. **Introductory Microeconomics** *(3 credits)*
    ECON 1110 Introductory Microeconomics

12. **Humanities** *(3-4 credits)*
    Choose any course with Course Distribution HA, LA, or CA.

13. **Statistics** *(4 credits)*
    Must be taken at Cornell, AP Statistics is not accepted
    Choose one of the following:
    PAM 2100 Introduction to Statistics
    AEM 2100 Introductory Statistics
    ILRST/STSCI 2100 Introductory Statistics
    PSYCH 3500 Statistics and Research Design
    BTRY 3010 Biological Statistics I
    MATH 1710 Statistical Theory and Application in the Real World
    ENGRD 2700 Basic Engineering Probability and Statistics

14. **Calculus/Advanced Math** *(8 credits)*
    Choose one of the following sequences:
    (a) MATH 1110-1120 Calculus I and II
    (b) MATH 1110-1220 Calculus I and Theoretical Calculus II
    (c) MATH 1910-1920 Calculus for Engineers and Multivariable Calculus for Engineers
    (d) AP Calculus BC (score of 5) + MATH 1910
    Note: If you have earned a score of 5 on AP Calculus BC you are eligible to choose option (d) above.
15. **Ethics/Sustainability (3-4 credits)**
   Choose from one of the following:
   BEE 3299 Sustainable Development: A Web-Based Course
   BSOC 2051 Ethical Issues in Health and Medicine (also STS 2051)
   BSOC 2061 Ethics and the Environment (also STS 2061/PHIL 2460)
   CRP 3011 Ethics, Development, and Globalization
   CRP 3840 Green Cities
   DEA 1200 Art + Science: Sustainability, Multiculturalism and Transdisciplinarity
   DEA 4220 Ecological Literacy and Design (also ARCH 4601)
   DSOC 3240 Environmental Sociology
   FSAD 4021/6021 Apparel and Textiles in Developing Nations I/Apparel and Textiles in Developing Nations II
   GOVT 4917 Ethics in International Relations
   INFO 1200 Information Ethics, Law, and Policy
   NTRES 3320 Introduction to Ethics and Environment
   PAM 3670 Economics and Environmental Policy
   PHIL 1450 Contemporary Moral Issues
   PHIL 2410 Ethics
   PHIL 2450 Ethics and Health Care

16. **Electives (Variable)**
   Any courses that are not taken in Areas 1-15 above, count as Electives.

17. **Physical Education Requirement (2 courses)**
   Physical Education must be completed in order to graduate. However, physical education does not count toward college and university minimum credit requirements for full-time status, nor does it count towards the 120 credits required for graduation.

18. **Swim Test Requirement**
   A successful swim test must be completed in order to graduate.

**College Policies:**

- **120 Overall Credits**
  - Students must complete 120 credits toward graduation.
  - A maximum of 15 credits of AP credit and in absentia credit can count towards the 120 total credits.
  - 15 credits of Study Abroad/Exchange and Cornell-In-Washington or 12 credits of Capital Semester can count towards total electives.

- **43 HE Credits**
  - Students must complete a minimum of 43 HE credits.
  - HE non-departmental courses at the 2000-level and below do not count toward the 43 HE credits.
  - Students must complete 5 HE credits by the end of the freshmen year and 12 HE credits by the end of the sophomore year.

- **9 HE Credits outside the major**
  - Students must complete a minimum of 9 HE credits outside of FSAD. These credits are given for any Human Ecology course outside your major (except 4030). These can be taken S/U only if course is NOT used to fulfill a curriculum requirement.

- **Pass/Fail Courses [S/U]**
  - S/U grading option may NOT be used for any required course [Areas 1-15] unless it is the only grade option offered for those courses.
  - S/Us MAY be used for the 9 HE Credits outside the major and for electives in Area 16.
  - Students may apply no more than 12 credits of S/U towards graduation requirements. If a required course is only offered S/U, it will not count towards this limit. Students may take more S/Us if they choose, but the additional credit will not be applied towards graduation.
  - The **deadline for changing grade options is the 57th calendar day of the semester**, the same as the “drop” deadline.

- **Special Study Courses [4000, 4010, 4020, 4030]**
  - A maximum of 12 credits of special study course work from Human Ecology or other colleges will count towards the 120 overall credits. Courses will be indicated on the class roster with a Component of either IND or RSC. [Additional credits can be taken but will not be applied.]
  - A maximum of 12 credits of 4000-4030 may count toward the 43 HE credit requirement.
  - A maximum of 3 credits of 4000-4020 (not including 4030) may count towards the 9 HE credits outside the major requirement as long as the special study is in a department outside the student’s major.
  - Students cannot TA (4030) the same course for credit more than once or take and TA the same course simultaneously. 4030 does not fulfill any requirements towards the major. Registration for 4030 may not exceed 5 credit hours per semester.