The Lyman Briggs College is a residential college that bridges the science and humanities through interdisciplinary teaching and research. It provides students with a fundamental core science education in mathematics, chemistry, biology, and physics. Additionally, the core program addresses historical, philosophical, and societal concerns and consequences of modern science, technology, the environment, and medicine. Advanced undergraduate courses in the student’s major are taken in the respective departmental units of the College of Natural Science, College of Engineering, College of Agriculture and Natural Resources, and the University at large. The majority of Lyman Briggs students pursue programs leading to advanced graduate study in the natural sciences, or professional programs related to medicine, dentistry, veterinary medicine, allied health, education or law. Many other students plan to enter careers in teaching at the secondary level, science writing, product representation, industry, or government service upon completion of their Bachelor of Science degree.

As a residential college, Lyman Briggs College has classrooms, laboratories, faculty offices, academic advisor offices, and administrative offices located in Holmes Hall, where all first year and many upper-level Lyman Briggs students live and learn. Because of this residential organization, students are able to develop a strong living-learning community identity by integrating academic and personal development, with faculty, staff and their peers in residence. Students are encouraged to balance their academic lives with social, cultural, athletic, service-learning, and leadership opportunities on campus and in the greater East Lansing community.

Students admitted to Michigan State University are admissible to Lyman Briggs College based initially on application date. There are no additional academic or program requirements for freshman admissions. Enrollment in the college is limited; therefore students are encouraged to apply early. Applicants should indicate their intention to become a part of the Lyman Briggs College on the Michigan State University Application for Admissions. If a student has already submitted an application and would like to apply to Lyman Briggs College, she/he should contact the Office of Admissions directly as early as possible.

Students work closely with their academic advisors and faculty in developing an individualized academic plan. All students enter the program as ‘no major’ status and may declare a major as early as summer orientation or by the time they have earned 56 credit hours.

Students who are enrolled in the environmental biology/microbiology and microbiology coordinate majors in Lyman Briggs College may elect the Specialization in Food Processing and Technology. For additional information, refer to the Specialization in Food Processing and Technology statement in the Department of Food Science and Human Nutrition statement in the College of Agriculture and Natural Resources section of this catalog.

Admission as a Freshman to Lyman Briggs College
Any student who meets the general requirements for admission to the university as shown in the Undergraduate Education section of this catalog may enroll in Lyman Briggs College, pending available space.

Transfer Students
All students in good academic standing in Lyman Briggs College may transfer at any time to other programs at Michigan State University for which they are eligible, in order to accommodate changing academic needs and interests.

Students who wish to transfer into Lyman Briggs College should contact the Academic and Student Affairs Office to make an appointment to consult with the Admissions Coordinator. Space in Lyman Briggs College is limited.
UNDERGRADUATE PROGRAM

The Lyman Briggs College program leads to the Bachelor of Science Degree.

Requirements for the Bachelor of Science Degree in Lyman Briggs College

1. The University requirements for bachelor's degrees as described in the Undergraduate Education section of this University catalog. 120 credits, including general elective credits, are required for the Bachelor of Science degree in Lyman Briggs College.

Students who are enrolled in the College of Natural Science may complete the alternative track to Integrative Studies in Biological and Physical Sciences that is described in item 1, under the heading Graduation Requirements in the College statement. Certain courses referenced in requirement 3. below are equivalent to courses in the alternative track and, therefore, may be used to satisfy the alternative track.

The completion of the Lyman Briggs College mathematics and statistics requirement [referenced in item 3.c.(4) below] may also satisfy the University mathematics requirement.

The completion of Lyman Briggs 133 or one of the approved alternatives [referenced in requirement 3.a.(5)(a) below] may also be counted toward the University Tier I writing requirement.

The University's Tier II writing requirement for the Major and Coordinate Majors in Lyman Briggs College is met by completing Lyman Briggs College 492 and one of the following courses: English 473A; History 425; Lyman Briggs College 332, 333, 334, 335, 336, 337, 338, 339, 340, 355. Those courses are referenced in Items 3. a. (5) and 3. a. (6) below.

2. The requirements of Lyman Briggs College for the Bachelor of Science degree, referenced in item 3. a. below.

The credits earned in certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate.

3. The following requirements of Lyman Briggs College for the Bachelor of Science degree:

    a. CORE PROGRAM 46 to 55
        (1) Biology: One of the following groups of courses (8 to 10 credits):
            (a) Lyman Briggs 144, 145.
            (b) Biological Science 181H, 191H, 182H, 192H.
            (c) Biological Science 161, 171, 162, 172.
        (2) Chemistry: One of the following groups of courses (8 to 10 credits):
            (a) Lyman Briggs 171, 171L, 172, 172L.
            (b) Lyman Briggs 171, 171L; Chemistry 143.
            (c) Lyman Briggs 171, 171L, Chemistry 251.
            (d) Chemistry 141, 142, 161.
            (e) Chemistry 141, 143, 161.
            (f) Chemistry 141, 161, 251.
            (g) Chemistry 151, 152, 161.
            (h) Chemistry 181H, 182H, 185H.
        (3) Mathematics and Statistics: One of the following groups of courses (6 to 8 credits):
            (a) Lyman Briggs 118, 119.
            (b) Lyman Briggs 116; Statistics and Probability 231.
            (c) Mathematics 132, 133.
            (d) Mathematics 132; Statistics and Probability 231.
            (e) Mathematics 152H, 153H.
        (4) Physics: One of the following groups of courses (6 to 8 credits):
            (a) Lyman Briggs 273, 274.
            (b) Physics 231, 232, 291, 252.
            (c) Physics 183, 184.
            (d) Physics 181B, 182B, 251, 252.
            (e) Physics 231B, 232B, 251, 252.
            (f) Physics 183B, 184B.
            (g) Physics 193H, 294H.
        (5) History, Philosophy and Sociology of Science: A total of 13 credits from the courses in groups (a), (b), and (c) below. In addition to completing one course from each of the three groups, the student must complete one of the following courses from group (b) or group (c). All 11 or 12 credits from the courses in groups (a), (b), (c), (d), (e), and (f) below. In addition to completing one course from each of the three groups, the student must complete one of the following courses from group (b) or group (c).
            (a) One of the following courses: Lyman Briggs 133; Writing, Rhetoric and American Cultures 110, 115, 120, 125, 130, 135, 140, 145, 150, 159H.
            (b) One of the following courses: Lyman Briggs 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 355.
            (c) One of the following courses: Lyman Briggs 330, 331, 332, 333, 334, 335, 336, 337, 339, 340; English 473A; History 425.
            (d) Each of the following courses may be used to meet either requirement 3.a. or requirement 3.c. above, but not both of those requirements:
               Lyman Briggs 331, 332, 333, 334, 335, 336.
            (6) Senior Seminar: Lyman Briggs 492 (4 credits).
        b. MAJOR or COORDINATE MAJOR:

        Each student must complete the requirements of a Major or a Coordinate Major. The Major or Coordinate Major must be chosen from the lists of options below. Both the Major or Coordinate Major and the related courses must be approved by the student’s academic advisor. With the approval of the appropriate Lyman Briggs College Curriculum Coordinator or Undergraduate Director, courses other than those that are listed as requirements for a Major or Coordinate Major may be used to satisfy degree requirements.

Majors:

  Biology
  Computer Science
  Earth Science
  Environmental Science and Management
  Physical Science
  History, Philosophy and Sociology of Science

Majors and Coordinate Majors:

  (1) College of Agriculture and Natural Resources:
      Animal Science
      Entomology
      Fisheries and Wildlife
      Food Science

  (2) College of Engineering:
      Computer Science
      Students are admitted to this Coordinate Major after they have reached junior standing and have met certain other requirements specified by Lyman Briggs College.

  (3) College of Natural Science:
      Actuarial Science
      Astrophysics
      Biochemistry and Molecular Biology
      Biochemistry/Biotechnology
      Biological Science—Interdepartmental
      Biomedical Laboratory Science
      Chemical Physics
      Chemistry
      Computational Chemistry
      Diagnostic Molecular Science
      Earth Science—Interdepartmental
      Environmental Biology/Microbiology
      Environmental Biology/Plant Biology
      Environmental Biology/Zoology
      Environmental Geosciences
      Genomics and Molecular Genetics
      Geological Sciences
      Human Biology
      Mathematics
      Mathematics, Advanced
      Microbiology
      Neuroscience
      Nutritional Sciences
      Physical Science—Interdepartmental
      Physics
      Plant Biology
      Statistics
      Zoology

Majors

1. Biology: 41 CREDITS

    a. A minimum of 41 credits from the courses listed below including:
       (1) Organic Chemistry (6 credits):
           Both of the following courses:
           CEM 292 Organic Chemistry I ...................... 3
           CEM 293 Organic Chemistry II .................... 3
       (2) Biochemistry (4 to 6 credits):
           One of the following, either (a) or (b):
           (a) BMB 401 Comprehensive Biochemistry ........ 4
           (b) BMB 461 Advanced Biochemistry I ............ 3
       (3) Advanced Experiential Biology (8 credits):
           The following course:
           LB 348 Research Experiences in Biology ......... 3
           LB 493 Field Experience ......................... 1
           LB 495 Undergraduate Research ............... 1
           LB 496 Undergraduate Research ............... 1
           LB 497 Undergraduate Research ............... 1
           LB 498 Undergraduate Research ............... 1
           Other courses as approved by advisor.
       (4) Integrative Biology (16 credits):
           All of the following courses:
           IBIO 341 Fundamental Genetics .................. 4
           IBIO 355 Ecology ................................ 3
           IBIO 445 Evolution (W) .......................... 3
           MMG 301 Introductory Microbiology ............. 3
           MMG 409 Eukaryotic Cell Biology ............... 3
       (5) Organismic Diversity (3 or 4 credits):
           One of the following courses:
           ENT 404 Fundamentals of Entomology .......... 3
           ENT 422 Aquatic Entomology ................. 3
           ENT 470 General Nematology .................. 3
           FW 471 Ichthyology ............................ 4
           IBIO 306 Invertebrate Biology ............... 4
IBIO 324 Comparative Anatomy and Biology of Vertebrates (W) ............... 4
IBIO 360 Biology of Birds ............... 4
IBIO 365 Biology of Mammals ............... 4
IBIO 384 Biology of Amphibians and Reptiles (W) ............... 4
PLB 402 Biology of Fungi ............... 4
PLB 418 Plant Systematics ............... 4
PLB 424 Algal Biology ............... 4
Other courses as approved by advisor.

4. Environmental Sciences and Management ............... 41
   a. A minimum of 41 credits from the courses listed below including:
   (1) One of the following groups of courses (8 or 10 credits):
      (a) LB 118 Calculus I ............... 5
      (b) STT 231 Statistics for Scientists ............... 3
      (c) MTH 132 Calculus I ............... 3
      (d) STT 231 Statistics for Scientists ............... 3
   (2) One course from each of the following 7 areas (24 to 26 credits):
      (a) Ecology: ZOL 355 Ecology ............... 3
           ZOL 350 Ecology Laboratory ............... 1
      (b) Geology: GLG 201 The Dynamic Earth ............... 4
      (c) Taxonomy or Phylogenetic Biology: ENT 404 Fundamentals of Entomology ............... 4
      (d) Botany: PLB 418 Plant Systematics ............... 3
      (e) Microbiology: MMG 301 Introductory Microbiology ............... 3
      (f) Aquatic Systems: FW 420 Stream Ecology ............... 3
      (g) Microbiology: GLG 491 Field Geology – Summer Camp (W) ............... 6
   (3) One course from each of the following three groups (9 to 11 credits):
      (a) FOR 464 Forest Resource Economics (W) ............... 3
      (b) SOC 452 Environment and Society ............... 3
      (c) FW 424 Population Analysis and Management ............... 4
      (d) WW 444 Conservation Biology ............... 3
      (e) FW 410 Upland Ecosystem Management ............... 3
      (f) WW 417 Wetland Ecology and Management ............... 3
   Students who elect Sociology 452 must also complete Sociology 452L, to meet requirement 4. a. (3) (a).

5. Physical Science ............... 31
   a. A minimum of 31 credits from the courses listed below including:
   (1) The following course:
      (a) LB 220 Calculus III ............... 4
   (2) At least 27 credits in chemistry courses, in physics courses, or in chemistry and physics courses approved by the student's academic advisor. At least 20 of the 27 credits must be in courses at the 300 level or above, and at least 14 of the 27 credits must be in either chemistry courses or physics courses and must meet the conditions specified below:
      For students who elect to complete at least 14 credits in chemistry courses, at least 4 of the 14 credits must be laboratory credits at the 300–400 level.
      For students who elect to complete at least 14 credits in physics courses, at least 6 of the 14 credits must be in modern physics, and at least 3 of the 14 credits must be laboratory credits.

6. History, Philosophy and Sociology of Science ............... 24
   a. A minimum of 24 credits in 300–400 level science and technology studies courses approved by the student's academic advisor. Courses in the Lyman Briggs College CORE PROGRAM and Lyman Briggs 492 may not be used to satisfy this requirement. Courses outside Lyman Briggs College may be used to satisfy this requirement.

MINOR IN HISTORY, PHILOSOPHY AND SOCIOLOGY OF SCIENCE
The Minor in History, Philosophy and Sociology of Science, which is administered by Lyman Briggs College, is designed to increase students understanding of the epistemological foundations and ethical elements of science while learning more of the history of some areas of science and appreciating the complex ways that science is connected to other social institutions and practices.

The minor is available as an elective to students who are enrolled in a bachelor's degree program in Lyman Briggs College at Michigan State University. Students majoring in History, Philosophy and Sociology of Science in Lyman Briggs College are not eligible for the minor. With the approval of the college, the courses
that are used to satisfy the minor may also be used to satisfy the requirements for the bachelor's degree.

Students who plan to complete the requirements for the minor should consult an undergraduate advisor in Lyman Briggs College.

### Requirements for the Minor in History, Philosophy and Sociology of Science

Complete 15 to 16 credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB 330</td>
<td>Topics in History, Philosophy, and Sociology of Science (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 331</td>
<td>Literature and Science (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 332</td>
<td>Technology and Culture (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 333</td>
<td>Topics in History of Science (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 334</td>
<td>Science, Technology, and Public Policy (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 335</td>
<td>The Natural Environment: Perceptions and Practices (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 336</td>
<td>Gender, Sexuality, Science, Technology (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 355</td>
<td>Philosophy of Technology (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 490E</td>
<td>Advanced Directed Study in History, Philosophy, and Sociology of Science (W)</td>
<td>4</td>
</tr>
</tbody>
</table>

2. Two of the following courses (7 or 8 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESA 430</td>
<td>Environmental and Natural Resource Law</td>
<td>3</td>
</tr>
<tr>
<td>ESA 440</td>
<td>Environmental and Natural Resource Policy in Michigan</td>
<td>3</td>
</tr>
<tr>
<td>GEO 435</td>
<td>Geography of Health and Disease</td>
<td>3</td>
</tr>
<tr>
<td>HST 416</td>
<td>History of the Atomic Bomb and Nuclear Culture</td>
<td>3</td>
</tr>
<tr>
<td>HST 420</td>
<td>History of Sexuality since the 18th Century</td>
<td>3</td>
</tr>
<tr>
<td>HST 425</td>
<td>American and European Health Care since 1800</td>
<td>4</td>
</tr>
<tr>
<td>HRT 486</td>
<td>Biotechnology in Agriculture: Applications and Ethical Issues</td>
<td>3</td>
</tr>
<tr>
<td>LB 330</td>
<td>Topics in History, Philosophy, and Sociology of Science (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 331</td>
<td>Literature and Science (W)</td>
<td>4</td>
</tr>
<tr>
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<tr>
<td>LB 355</td>
<td>Philosophy of Technology (W)</td>
<td>4</td>
</tr>
<tr>
<td>LB 490E</td>
<td>Advanced Directed Study in History, Philosophy, and Sociology of Science (W)</td>
<td>4</td>
</tr>
<tr>
<td>MC 350</td>
<td>Evolution and Society</td>
<td>4</td>
</tr>
<tr>
<td>MC 351</td>
<td>Science and Social Policy</td>
<td>4</td>
</tr>
<tr>
<td>MC 459</td>
<td>Science, Technology, Environment and Public Policy Capstone (N)</td>
<td>3</td>
</tr>
<tr>
<td>PHL 380</td>
<td>Nature of Science</td>
<td>3</td>
</tr>
<tr>
<td>PHL 482</td>
<td>Philosophy of Mind</td>
<td>3</td>
</tr>
<tr>
<td>PHL 480</td>
<td>Philosophy of Science</td>
<td>4</td>
</tr>
<tr>
<td>PHL 484</td>
<td>Philosophy of Biological Science</td>
<td>3</td>
</tr>
<tr>
<td>PHL 485</td>
<td>Philosophy of Social Science</td>
<td>3</td>
</tr>
<tr>
<td>SOC 368</td>
<td>Science, Technology, and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC 452L</td>
<td>Internship in Environment and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC 472L</td>
<td>Sociology of Health Care Systems</td>
<td>1</td>
</tr>
<tr>
<td>SOC 475L</td>
<td>Sociology of Health Care Systems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 476L</td>
<td>Social Psychology of Health</td>
<td>3</td>
</tr>
<tr>
<td>ZOL 446</td>
<td>Environmental Issues and Public Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

Courses used to fulfill requirement 1. above may not be used to fulfill this requirement. Other courses may be used in fulfillment of this requirement with the approval of the student’s academic advisor.

### LYMAN BRIGGS COLLEGE 3 + 4 OPTION

Lyman Briggs College, in collaboration with the MSU College of Osteopathic Medicine, offers an opportunity for selected Lyman Briggs College students to earn a baccalaureate degree after satisfactory completion of a minimum of 90 credits at Michigan State University and a minimum of 30 credits through subsequent enrollment at the Michigan State University College of Osteopathic Medicine. Only students who matriculate as first-year students at Lyman Briggs College may pursue this option. Students interested in this option should consult with their college academic advisor during their first year in the college.

Admission to the MSU College of Osteopathic Medicine component of this program is limited to a small number of students who complete the specified university and college requirements and who fulfill admission requirements for the MSU College of Osteopathic Medicine Doctor of Osteopathic Medicine program.

All students in this program will complete a minimum of 90 credits at Michigan State University in the Lyman Briggs College Biology major. The requirements for the program are as follows:

1. Completion of all the Michigan State University graduation requirements, including integrative studies and general education.
2. Completion of the Lyman Briggs College graduation requirements including mathematics, chemistry, biology, physics, and history, philosophy and sociology of science.
3. Be pursuing the curriculum for the Lyman Briggs College Biology major.
4. Completion of a minimum of 30 credits at the MSU College of Osteopathic Medicine in the preclerkship component of the Doctor of Osteopathic Medicine degree program.

Upon satisfactory completion of the specified 120 credits, students in this program will be eligible for the Bachelor of Science degree in Lyman Briggs College with a major in Biology.