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.

Lyman Briggs College offers two minors: Bioethics; and History, Philosophy and Sociology of Science. Lyman Briggs College also participates in two minors: Entrepreneurship and Innovation; and Science, Technology, Environment, and Public Policy. Students who are enrolled in the environmental biology/microbiology and microbiology coordinate majors in Lyman Briggs College may elect the Minor in Food Processing and Technology. For additional information, refer to the Minor 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 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 Lyman Briggs College may complete the alternative track to Integrative Studies in Biological and Physical Sciences that is described in item 1.

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

3. 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 ........................................... 48 to 57

   (1) Biology: One of the following groups of courses (8 to 10 credits):

      a) Lyman Briggs 144, 145.
      b) Biological Science 181H, 182H, 191H, 192H.
      c) Biological Science 161, 162, 171, 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, 191H, 192H.

   (3) Mathematics and Statistics: One of the following groups of courses (8 to 8 credits):

      a) Lyman Briggs 118, 119.
      b) Lyman Briggs 118; Statistics and Probability 231.
      c) Mathematics 132, 133.
      d) Mathematics 132; Statistics and Probability 231.
      e) Mathematics 152H, 152R.

   (4) Physics: One of the following groups of courses (8 to 10 credits):

      a) Lyman Briggs 273, 274.
      b) Physics 231, 232, 251, 252.
      c) Physics 183, 184, 191, 192.
      e) Physics 191, 192, 193H, 294H.

   (5) History, Philosophy and Sociology of Science: A total of 11 or 12 credits from the courses in groups (a), (b), and (c) below.

      a) One of the following courses: Lyman Briggs 133; Writing, Rhetoric and American Cultures 101.
      b) One of the following courses: Lyman Briggs 321A, 322A, 323A, 324A, 325A, 326A, 326B, 327A, 327B.
      c) One of the following courses: Lyman Briggs 312B, 321B, 322B, 323B, 324B, 325B, 326B, 327B.

   (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

   Coordinate Majors:

   (1) College of Agriculture and Natural Resources:

      a) Animal Science
      b) Entomology
      c) Fisheries and Wildlife
      d) Food Science

   (2) College of Engineering:

      a) Computer Science
      b) 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:

      a) Actuarial Science
      b) Astrophysics
      c) Biochemistry and Molecular Biology
      d) Biochemistry/Biotechnology
      e) Biological Science—Interdepartmental
      f) Biomedical Laboratory Science
      g) Chemical Physics
      h) Chemistry
      i) Computational Chemistry
      j) Computational Mathematics
      k) Earth Science—Interdepartmental
      l) Environmental Biology/Microbiology
      m) Environmental Biology/Plant Biology
      n) Environmental Biology/ Zoology
      o) Environmental Geosciences
      p) Genomics and Molecular Genetics
      q) Geological Sciences
      r) Human Biology
      s) Mathematics
      t) Mathematics, Advanced
      u) Microbiology
      v) Neuroscience
      w) Nutritional Sciences
      x) Physical Science—Interdepartmental
      y) Physics
      z) Physiology
      A) Plant Biology
      B) Statistics
      C) Zoology

   Majors

   1. Biology ..................................................... 41

      a) A minimum of 41 credits from the courses listed below including:

         (1) Organic Chemistry (6 credits):

         a) CEM 251 Organic Chemistry I .......................... 3
         b) CEM 252 Organic Chemistry II .......................... 3

         (2) Biochemistry (4 to 6 credits):

         a) BMB 401 Comprehensive Biochemistry ................... 4
         b) BMB 461 Advanced Biochemistry I ......................... 3
         c) BMB 462 Advanced Biochemistry II ....................... 3

         (3) Advanced Experimental Biology (6 credits):

         a) LB 348 Research Experiences in Biology .................. 3
         b) LB 490B Advanced Directed Study – Biology ................. 1 to 4
         c) LB 493 Field Experience ................................... 1 to 4
         d) LB 494 Undergraduate Research ............................ 1 to 4
         e) Other courses as approved by advisor.

         (4) Integrative Biology (16 credits):

         a) All of the following courses:

         i) IBIO 341 Fundamental Genetics .......................... 4
         ii) IBIO 355 Ecology ......................................... 3
         iii) IBIO 445 Evolution (W) ................................ 3
         iv) MMG 301 Introductory Microbiology ..................... 3
         v) MMG 409 Eukaryotic Cell Biology ......................... 3

         (5) Organismal Diversity (3 or 4 credits):

         a) One of the following courses:

         i) ENT 404 Fundamentals of Entomology ..................... 3
         ii) ENT 422 Aquatic Entomology ................................ 3
         iii) ENT 470 General Nematology ................................ 3
         iv) FW 471 Ichthyology ........................................ 4
         v) IBIO 306 Invertebrate Biology ............................ 4
         vi) IBIO 328 Comparative Anatomy and Biology of Vertebrates (W) .................. 4
         vii) IBIO 360 Biology of Birds ................................ 4
         viii) IBIO 365 Biology of Mammals ............................ 4
         ix) IBIO 384 Biology of Amphibians and Reptiles (W) ........ 4
         x) PLB 402 Biology of Fungi ................................ 4
         xi) PLB 418 Plant Systematics .................................. 3
         xii) PLB 424 Algal Biology .................................... 4
         xiii) Other courses as approved by advisor.

         (6) Ecology, Evolution, and Behavioral Biology (3 or 4 credits):

         a) One of the following courses:

         i) ZOOG 404 Integrative Biology (W) .......................... 4
         ii) ZOOG 409 Marine Biology (W) ............................ 4
         iii) ZOOG 410 Paleobiology .................................... 4
         iv) ZOOG 430 Conservation Biology (W) ....................... 4
         v) ZOOG 450 Evolutionary Development (W) ................. 4
         vi) ZOOG 460 Ecological Genetics ............................ 4
         vii) ZOOG 470 Community Ecology (W) ...................... 4

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

a. A minimum of 27 credits from the courses listed below including:
   (1) All of the following courses (24 credits):
       CSE 320 Computer Organization and Architecture ............3
       GLG 351 Structural Geology and Tectonics .................4
       GLG 361 Petrology (W) ......................................4
       GLG 401 Plate Tectonics (W) ................................4
       GLG 481 Reservoirs and Aquifers ............................3
       GLG 491 Field Geology – Summer Camp (W) .................6
   (2) At least two of the following courses (6 credits):
       CSE 420 Computer Architecture ................................3
       CSE 422 Computer Networks ..................................3
       CSE 435 Software Engineering ................................3
       CSE 440 Introduction to Artificial Intelligence ............4
       CSE 450 Translation of Programming Languages ............3
       CSE 452 Organization of Programming Languages ...........3
   (3) One course from each of the following 7 areas (24 to 26 credits):
       (a) Ecology: ZOL 335 Ecology .................................3
          ZOL 355L Ecology Laboratory ..............................1
       (b) Geology: GLG 201 The Dynamic Earth ....................4
       (c) Taxonomy or Phylogenetic Biology: ENT 404 Fundamentals of Entomology ...............4
          ZOL 306 Invertebrate Biology .............................3
       (d) Biochemistry: SMB 401 Basic Biochemistry ...............4
       (e) Aquatic Systems: FW 420 Stream Ecology ...............3
       (f) Microbiology: MMG 301 Introductory Microbiology .......3
       (g) Economics: EC 301 Introduction to Microeconomics ....3
   (3) One course from each of the following three groups (9 to 11 credits):
       (a) FOR 465 Forest Resource Economics (W) ..................3
          GE 452 Environmental and Society ........................3
       (b) FW 424 Population Analysis ..............................4
          WW 444 Conservation Biology ..............................3
       (c) FW 410 Upland Ecosystem Management .....................3
   (3) 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.

5. Physical Science

a. A minimum of 31 credits from the courses listed below including:
   (1) The following course:
       LB 220 Calculus III ...........................................4
   (2) At least 27 credits in courses approved by the student's academic advisor. At least 5 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

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 452 may not be used to satisfy this requirement. Courses outside Lyman Briggs College may be used to satisfy this requirement.

MINOR IN BIOETHICS

The Minor in Bioethics, which is administered by Lyman Briggs College, is available as an elective to students who are enrolled in bachelor's degree programs at Michigan State University. The minor is designed to prepare students to engage with the evolving set of ethical issues in biomedicine that they will encounter in their careers or their daily lives. The minor's interdisciplinary character fosters students' abilities to understand and question health care systems from a wide variety of intellectual viewpoints. Such inter-disciplinary study also promotes communication across disciplinary boundaries.

Students wishing to pursue careers in health-related fields may find the minor particularly appealing. In addition, students pursuing academic programs outside health-related fields often find that the minor complements their major. With the approval of the department and college that administer the student's degree program, the courses that are used to satisfy the requirements for the minor may also be used to satisfy the requirements for the bachelor's degree.
LYMAN BRIGGS COLLEGE
Undergraduate Program

Requirements for the Minor in Bioethics
CREDITS
1. Both of the following courses (3 credits):
   LB 240 Bioethics: Theories and Methods .................... 2
   LB 440 Bioethics Capstone .................................. 1
2. Complete 15 credits from at least four courses. No more than 8 credits may be from the same discipline. Students should work with the advisor for appropriate substitution requests.
   ANP 270 Women and Health: Anthropological and International Perspectives .................... 3
   ANP 370 Culture, Health, and Illness .......................... 3
   ANP 423 Physiological Anthropology ....................... 3
   ANP 425 Issues in Medical Anthropology ................... 3
   ANP 471 The Anthropology of Alternative Medicine ........ 3
   ANS 427 Environmental Toxicology and Society ............. 3
   CEP 470 Disability in a Diverse Society ..................... 3
   EC 498 Economics of Health Care (W) ........................ 3
   ENG 473A Literature and Medicine ......................... 3
   EPI 390 Disease in Society: An Introduction to Epidemiology and Public Health ....................... 4
   GEO 435 Geography of Health and Disease .................... 3
   HNF 375 Community Nutrition .................................. 3
   HNF 406 Global Foods and Culture ............................ 3
   HST 420 History of Sexuality since 18th Century ............... 3
   HST 425 American and European Health Care since 1800 ........ 4
   LB 445 Sport and Physical Activity in Society (W) ........... 3
   LB 324A Science and Sex, Gender, Sexuality – Arts and Humanities (W) ..................... 4
   LB 324B Science and Sex, Gender, Sexuality – Social Sciences (W) .................. 4
   LB 326A Medicine and Health – Arts and Humanities (W) .... 4
   LB 326B Medicine and Health – Social Sciences (W) ........ 4
   LB 355 Philosophy of Technology (W) .......................... 4
   MC 351 Science and Social Policy .............................. 4
   PHL 344 Ethical Issues in Health Care ......................... 3
   PHL 380 Nature of Science ..................................... 3
   PHL 444 Philosophical Issues in Biomedicine ................... 4
   PHL 480 Philosophy of Science .................................. 3
   PHL 485 Philosophy of Social Science ......................... 3
   PSY 280 Abnormal Psychology .................................. 3
   PSY 320 Health Psychology ...................................... 3
   REL 385 Religion, Health, and Healthcare .................... 3
   SOC 368 Science, Technology, and Society .................... 4
   SOC 451 Dynamics of Population ............................... 3
   SOC 475 Health and Society ..................................... 3
   SW 472 Social Work in Health Care ............................... 3
   WS 304 Gay, Bisexual, Transgender, Queer (LBGTQ) and Sexuality Studies .................... 3

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 with a major in Biology. All students in this program will complete 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 of study.

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.

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 of study.

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.