155 Introduction to Quantitative Science and Research
Fall. 3(2-3) P: (MTH 1825 or concurrently) or (MTH 103 or concurrently) R: Open to freshmen in the Lyman Briggs College. Exploration of fundamental chemistry, biology, physics, mathematics and statistics. Quantitative analysis and research.

171 Principles of Chemistry I
Fall. 4(4-0) P: MTH 114 or (MTH 161 or concurrently) or (MTH 132 or concurrently) or (MTH 133 or concurrently) or (MTH 152H or concurrently) or (LB 118 or concurrently) or (LB 119 or concurrently) R: Open to students in the Lyman Briggs College. Stoichiometry, quantum mechanics and interactions of light with matter, periodic trends, Lewis dot structures, molecular structure, polarity and intermolecular forces, valence bond theory, introduction to organic chemistry, enthalpy and heat transfer.

171L Introductory Chemistry Laboratory I
Fall. 1(0-3) P: (LB 171 or CEM 141 or CEM 151 or CEM 181H R: Open to students in BM 161 or BM 162 or concurrently) SA: BS 158H, BS 110 Not open to students with credit in BM 161 or BM 153H. Continuation of LB 118. Integration techniques, elementary differential equations, parametric curves, polar coordinates, sequences and series, vectors, and vector operations.

172 Principles of Chemistry II
Spring. 4(3-0) P: LB 171 or BM 141 or BM 151 or BM 181H R: Open to students in the Lyman Briggs College. Stoichiometry, Acid-base titration, redox titration. Reaction kinetics, thermochemistry, Beer's law, freezing point depression, and equilibrium constants.

172L Principles of Chemistry II – Reactivity Laboratory
Spring. 1(0-3) P: (LB 171 or BM 141 or BM 151 or BM 181H) and (LB 171L or BM 182H) or (LB 171 or BM 161 or BM 185H) R: Open to students in the Lyman Briggs College. Stoichiometry, quantum mechanics and interactions of light with matter, periodic trends, Lewis dot structures, molecular structure, polarity and intermolecular forces, valence bond theory, introduction to organic chemistry, enthalpy and heat transfer.

181 Introduction to Science, Technology, the Environment and Public Policy
Fall. 3(3-0) Interdepartmental with Fisheries and Wildlife and James Madison College. Administered by Fisheries and Wildlife. Relation of science and technology to ethics and public policy. Environmental law and public policy. Managing fish, water and wildlife resources at state, national, and international levels. Science and technology in developing countries. Impacts of military technology on environmental policy.
Directed studies in computing.

290C  Directed Study--Chemistry/Physics

Directed studies in biology.

290D  Directed Study--Mathematics

Directed studies in mathematics, history, philosophy, and sociology of science.

290A  Directed Study-Multidisciplinary

290B  Directed Study--Biology

Directed studies in biology.

290C  Directed Study--Chemistry/Physics

Directed studies in chemistry and physics.

290D  Directed Study--Mathematics

Directed studies in mathematics.

290E  Directed Study--History, Philosophy, and Sociology of Science

Directed study in history, philosophy, and sociology of science.

290F  Directed Study--Computing

Directed studies in computing.

330  Topics in History, Philosophy, and Sociology of Science (W)

331  Literature and Science (W)

332  Technology and Culture (W)

333  Topics in History of Science (W)

334  Science, Technology, and Public Policy (W)

335  The Natural Environment: Perceptions and Practices (W)

336  Gender, Sexuality, Science, Technology (W)

346  Advances in Ecology, Evolutionary and Behavioral Biology

347  Advances in Applied Biology

355  Philosophy of Technology (W)

368  Science, Technology and Society

380  International Studies in Lyman Briggs College
415 Methods of Theoretical Physics
Spring, 4(4-0) Interdepartmental with Physics. Administered by Lyman Briggs. P: (MTH 234 or concurrently) or (LB 220 or concurrently) or (MTH 254H or concurrently) and (LB 273 or PHY 183 or PHY 193H) and (LB 274 or PHY 184 or PHY 294H) RB: (MTH 235 or concurrently) or (MTH 255H or concurrently) or (MTH 340 or concurrently) SA: LBS 415

416 History of the Atomic Bomb and Nuclear Culture
Fall of odd years. 3(3-0) Interdepartmental with History. Administered by History. P: Completion of Tier I Writing Requirement. R: Not open to freshmen or sophomores.
The atom bomb as a technical, military, political, scientific, and cultural object. Conception and harnessing of atomic energy, the changing role of science, and the introduction of global suicide as strategic policy. Focus on the network of resources necessary to produce a technical object such as the atom bomb, as well as the socio-cultural impact of the introduction of new technology.

425 American and European Health Care since 1800
Fall, Spring, 4(4-0) Interdepartmental with History. Administered by History. P: Completion of Tier I writing requirement. R: Not open to freshmen.

438 Philosophy of Ecology (W)
Spring of even years. 3(3-0) Interdepartmental with Fisheries and Wildlife. Administered by Fisheries and Wildlife. P: Completion of Tier I Writing Requirement. RB: Additional coursework in ecology, natural resources, philosophy, or environmental sciences. R: Open to juniors or seniors or graduate students.
Conceptual issues in the science of ecology, including connections between ecology and environmental philosophy. Western and non-western perspectives.

459 Science, Technology, Environment and Public Policy Capstone (N)
Fall, Spring. 3(3-0) Interdepartmental with James Madison College. Administered by James Madison College. Selected topics in science, technology, environment and public policy (STEPPS). Analysis of key issues and problems. Case studies.

473A Literature and Medicine
Spring, 3(3-0) Interdepartmental with English. Administered by English. P: Completion of Tier I Writing Requirement R: Not open to freshmen or sophomores. SA: ENG 483

490A Advanced Directed Study--Multidisciplinary
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open to students in the Lyman Briggs College. SA: LBS 490A
Directed advanced studies involving at least two Lyman Briggs College curricular areas: biology, chemistry, physics, mathematics, history, philosophy, sociology of science, and computing.

490B Advanced Directed Study--Biology
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to students in the Lyman Briggs College. SA: LBS 490B
Directed advanced studies in biology.

490C Advanced Directed Study--Chemistry or Physics
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open to students in the Lyman Briggs College. SA: LBS 490C
Directed advanced studies in chemistry or physics.

490D Advanced Directed Study--Mathematics
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open to students in the Lyman Briggs College. SA: LBS 490D
Directed advanced studies in mathematics.

490E Advanced Directed Study--History, Philosophy, Sociology of Science (W)
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open to juniors or seniors in the Lyman Briggs College or in the Science, Technology, Environment and Public Policy Specialization. SA: LBS 490E
Directed advanced studies in history, philosophy, sociology of science, technology, the environment, or medicine.

492 Senior Seminar (W)
Fall, Spring. 4(4-0) P: Completion of Tier I Writing Requirement RB: One course in the History, Philosophy, and Sociology of Science at the 300-level or higher. R: Open to juniors or seniors in the Lyman Briggs College or in the Entomology major or in the Science, Technology, Environment and Public Policy Specialization. SA: LBS 492
Selected problems in the study of science and technology as human activities, using philosophical, historical, literary, social science or interdisciplinary perspectives or methods. Development and defense of thesis paper.

493 Field Experience
Fall, Spring. Summer. 1 to 10 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Open to students in the Lyman Briggs College. SA: LBS 493
Experiential learning related to the public or private practice of science and technology.

494 Undergraduate Research
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of college; application required. SA: LBS 494
Faculty-guided undergraduate research.