

**Descriptions—Linguistics
of
Courses**

871. Advanced Studies in Sociolinguistics
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
P: LIN 401.

Linguistic and societal bases for language choice. Topics exemplifying modern sociolinguistics including concerns of power, politeness, gender, quantitative microsociolinguistics, and ethnomethodology.
QP: LIN 415 QA: LIN 815

890. Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.

R: Approval of department.
Special projects, directed reading, and research arranged by an individual graduate student and a faculty member in areas supplementing regular course offerings.
QA: LIN 860

891. Special Topics
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.

R: Approval of department.
Special topics supplementing regular course offerings proposed by faculty on a group study basis for graduate students.

892. Seminar in Linguistics
Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

R: Open only to graduate students in Linguistics. Approval of department.
Directed original research on current topic in linguistics.
QA: LIN 880

898. Master's Research
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course.

R: Approval of department.
Directed research in support of Plan B master's degree requirements.

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.

R: Approval of department.
Directed research leading to a master's thesis, used in partial fulfillment of Plan A master's degree requirements.
QA: LIN 899

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 36 credits in all enrollments for this course.

R: Approval of department.
QA: LIN 999

**LINGUISTICS AND
LANGUAGES**

LL

**Department of Linguistics and
Germanic, Slavic, Asian and
African Languages
College of Arts and Letters**

290. Independent Study
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

R: Approval of department.
Special projects in Linguistics and Languages arranged by an individual student and a faculty member in areas supplementing regular course offerings.
QA: LOA 299

380. Methods of Teaching Foreign Languages

Spring of even-numbered years. 3(3-0)
P: GRM 202 or RUS 202 or CHS 202 or JPN 202 or approval of department.
Methods of teaching Germanic, Slavic, Asian, and African languages for teacher education candidates. Theories of second language acquisition and practical application of teaching strategies.
QP: GRM 203 QA: T E 340

490. Independent Study
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

R: Approval of department.
Special projects in linguistics and languages arranged by an individual student and a faculty member in areas supplementing regular course offerings.
QA: LOA 499

491. Special Topics in Linguistic and Languages

Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
R: Approval of department.
Special topics supplementing regular course offerings proposed by faculty on a group study basis.

LYMAN BRIGGS SCHOOL LBS

**Lyman Briggs School
College of Natural Science**

117. College Algebra and Trigonometry
Fall. 3(3-0)

R: Open only to Lyman Briggs School majors. Designated score on mathematics placement test. Not open to students with credit in MTH 103 or MTH 110 or MTH 116 or MTH 120.
Rational and real numbers. Functions and inverses. Equations, simultaneous equations. Inequalities. Graphing. Trigonometry.
QA: LBS 111, MTH 111, MTH 108, MTH 109

118. Calculus I
Fall, Spring. 5(5-0)

P: LBS 117 or MTH 110 or MTH 116 or designated score on mathematics placement test. Not open to Lyman Briggs School majors. Not open to students with credit in MTH 120 or MTH 124 or MTH 132 or MTH 152H. Limits, continuity, differentiation, integration, and elementary applications.
QP: LBS 111, MTH 109, MTH 111 QA: LBS 112, MTH 112, LBS 113, MTH 113

119. Calculus II
Fall, Spring. 4(4-0)

P: LBS 118. R: Open only to Lyman Briggs School majors. Not open to students with credit in MTH 133 or MTH 153H or MTH 235.
Continuation of LBS 118. Further applications of one variable calculus. Infinite series. Ordinary differential equations.
QP: LBS 113, MTH 113 QA: LBS 113, MTH 113, LBS 217, MTH 215

125. Introduction to C Language with Applications
Spring. 3(3-0)

P: LBS 118. R: Open only to Lyman Briggs School majors. Not open to students with credit in CPS 130 or CPS 131 or CPS 230.
Computer programming using the C language and the UNIX operating system. Emphasis on scientific and mathematical applications.
QP: MTH 112 or LBS 112

126. Personal Computers and Networks
Fall, Spring. 3(3-0)

R: Open only to Lyman Briggs School majors. Not open to students with credit in CPS 100.
Selecting, installing and using personal computer software and hardware. Computer networks.

127. Introduction to FORTRAN Language with Applications
Fall. 3(3-0)

P: LBS 118 or concurrently. R: Open only to Lyman Briggs School majors. Not open to students with credit in CPS 131.
Computer programming using the FORTRAN language and the UNIX operating system with emphasis on scientific and mathematical applications.

133. Introduction to Science and Technology Studies
Fall, Spring. 4(4-0)

P: Designated score on English placement test. R: Open only to Lyman Briggs School majors. Not open to students with credit in MC 111, MC 112, ATL 110, ATL 120, ATL 125, ATL 130, ATL 140, ATL 145, ATL 150, ATL 195H.

Instruction and practice in expository writing. Paper and report topics drawn from readings in the history, philosophy, and other areas of science and technology.
QA: LBS 131, LBS 232

144. Biology I: Organismal Biology
Fall, Spring. 4(3-3)

R: Open only to Lyman Briggs School majors. Not open to students with credit in BS 110.
Modern biology at the organismal level of integration. Principles of genetics, evolution, ecology, and organismal diversity as interactive units.
QA: LBS 140, BS 212

145. Biology II: Cellular and Molecular Biology
Fall, Spring. 4(3-3)

P: LBS 144; CEM 141 or CEM 151 or CEM 181H or LBS 165 or concurrently. R: Open only to Lyman Briggs School majors. Not open to students with credit in BS 111.

Modern biology mainly at the cellular level of integration. Principles of cell structure and function are used to explain processes of bioenergetics, protein synthesis, and development.
QP: LBS 140 QA: LBS 141, LBS 242, BS 210, BS 211

164. Introduction to Physics and Chemistry I
Fall. 3(4-0)

P: LBS 117 or concurrently or MTH 116. R: Open only to Lyman Briggs School majors. Not open to students with credit in PHY 181B or PHY 183 or PHY 183B or PHY 231 or PHY 231B or PHY 193H.
Basic physics principles, problem solution techniques. Mechanical systems, elementary thermodynamics, vibrations and waves. Atoms and nuclei.
QP: MTH 109, MTH 111, LBS 111 QA: LBS 162, LBS 261, PHY 237, PHY 281

164L. Introductory Physics Laboratory I
Fall. 1(0-3)

P: LBS 164 or concurrently. R: Open only to Lyman Briggs School majors. Not open to students with credit in PHY 192 or PHY 251.
Techniques and instruments in the physics laboratory. Selected experiments in classical and modern physics.
QA: LBS 162L, LBS 261L, PHY 257, PHY 259, PHY 297, PHY 299

165. Introduction to Chemistry and Physics I
Spring. 4(4-0)

P: LBS 164. R: Open only to Lyman Briggs School majors. Not open to students with credit in CEM 141 or CEM 152 or CEM 182H.
Chemical principles: structure and bonding, periodic properties. Stoichiometry, states of matter. Solutions, acids and bases, equilibria. Thermodynamics, kinetics.
QA: LBS 161, LBS 163, CEM 141, CEM 151, CEM 152

165L. Introductory Chemistry Laboratory I
Spring. 1(0-3)

P: LBS 165 or concurrently. R: Open only to Lyman Briggs School majors. Not open to students with credit in CEM 161 or CEM 185H.
Determination of density and molecular weight. Stoichiometry. Acid-base titration, redox titration. Reaction kinetics, thermochemistry, Beer's law, freezing point depression, and equilibrium constants.
QA: LBS 161L, LBS 163L, CEM 161

220. Calculus III
Fall, Spring. 5(5-0)

P: LBS 119. R: Open only to Lyman Briggs School majors. Not open to students with credit in MTH 234 or MTH 235 or MTH 254H or MTH 255H.
Continuation of LBS 119. Three-dimensional vector geometry, differential calculus of functions of two or three variables. Double and triple integrals, line integrals.
QP: LBS 113, MTH 113 QA: LBS 216, LBS 217, MTH 214, MTH 215

- 239. Topics in Science and Technology Studies**
Fall, Spring. 4(4-0)
P: LBS 133 or another Tier I writing course. R: Open only to Lyman Briggs School majors.
Topics in history, sociology, and philosophy of science and technology. Science policy.
QP: LBS 131
- 246. Experimental Projects in Biology**
Spring. 1 to 3 credits. A student may earn a maximum of 5 credits in all enrollments for this course.
P: LBS 145 or BS 111; LBS 133 or another Tier I writing course. R: Open only to Lyman Briggs School majors.
Experiments, field studies. Selected problems in biology such as cell structure and metabolism, diversity, stability, evolution of natural communities, and reproductive biology.
QP: LBS 140, LBS 141 QA: LBS 142
- 266. Introduction to Chemistry and Physics II**
Fall. 3(4-0)
P: LBS 118 or concurrently, LBS 165. R: Open only to Lyman Briggs School majors. Not open to students with credit in CEM 142 or CEM 151 or CEM 181H. Spectroscopy and symmetry. Coordination chemistry, solubility and stability constants. Electrochemistry, main group chemistry, atmospheric chemistry, organometallic chemistry. Polymers.
QP: LBS 161, CEM 141, CEM 152 QA: LBS 262, CEM 153
- 266L. Introductory Chemistry Laboratory II**
Fall. 1(0-3)
P: LBS 165L, LBS 266 or concurrently. R: Open only to Lyman Briggs School majors. Not open to students with credit in CEM 162.
Synthesis and characterization of chemical systems.
QP: LBS 163, LBS 163L QA: LBS 262L, CEM 162, CEM 163
- 267. Introduction to Physics and Chemistry II**
Spring. 3(4-0)
P: LBS 118, LBS 164. R: Open only to Lyman Briggs School majors. Not open to students with credit in PHY 182B or PHY 184 or PHY 184B or PHY 232 or PHY 232B or PHY 294H.
Principles of electromagnetic theory, special relativity, quantum physics, optics, atomic and subatomic physics.
QP: LBS 261, PHY 237, PHY 237B, PHY 281 QA: LBS 263, PHY 238, PHY 238B, PHY 239, PHY 239B, PHY 282, PHY 283
- 267L. Introductory Physics Laboratory II**
Spring. 1(0-3)
P: LBS 164L; LBS 267 or concurrently R: Open only to Lyman Briggs School majors. Not open to students with credit in PHY 192 and PHY 252.
Selected experiments in classical and modern physics.
QP: LBS 162L, PHY 257, PHY 297 QA: LBS 261L, LBS 263L, PHY 258, PHY 259, PHY 298, PHY 299
- 290A. 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 only to Lyman Briggs School majors.
Directed studies involving at least two Lyman Briggs School curricular areas: biology, chemistry, physics, mathematics, science and technology, computer science.
QA: LBS 290A
- 290B. Directed Study--Biology**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Open only to Lyman Briggs School majors.
Directed studies in biology.
QA: LBS 290B
- 290C. Directed Study--Chemistry/Physics**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Open only to Lyman Briggs School majors.
Directed studies in chemistry and physics.
- 290D. 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 only to Lyman Briggs School majors.
Directed studies in mathematics.
- 290E. Directed Study--Science and Technology Studies**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Open only to Lyman Briggs School majors.
Directed study in science and technology studies.
- 290F. Directed Study--Computing**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Open only to Lyman Briggs School majors.
Directed studies in computing.
QA: LBS 290F
- 322. Technology and Culture**
Fall. 4(4-0) Interdepartmental with American Studies.
P: LBS 133. R: Not open to freshmen and sophomores.
History of technology with special emphasis on the interaction of technical innovation and other elements of culture.
QP: LBS 232 QA: LBS 376, LBS 378
- 333. Topics in History of Science**
Fall, Spring. 4(4-0) A student may earn a maximum of 8 credits in all enrollments for this course.
P: LBS 133 or another Tier I writing course. R: Open only to juniors and seniors in Lyman Briggs School.
Various themes or periods in physical/biological science. May emphasize patterns of theory development, changes in explanatory aims and standards or interaction of social and cultural factors with scientific ideas, practices, instrumentation or experiential.
QP: LBS 232 QA: LBS 374, LBS 375
- 334. Science, Technology and Public Policy**
Spring. 4(4-0)
P: LBS 133. R: Not open to freshmen. Open only to Lyman Briggs School majors.
Science and technology in public policy formation considered from the perspectives of the history, philosophy, and sociology of science and technology.
QP: LBS 232
- 335. The Natural Environment: Perceptions and Practices**
Spring. 4(4-0) Interdepartmental with American Studies.
P: LBS 133 or another Tier I writing course. R: Not open to freshmen. Open only to students in American Studies and in Lyman Briggs School.
American attitudes toward the natural environment and related public and private institutions.
QP: LBS 131 QA: LBS 377
- 347. Advances in Applied Biology**
Fall. 3(2-3)
P: ATL 110 or LBS 133; BS 111 or LBS 145. R: Not open to freshmen and sophomores. Open only to Lyman Briggs School majors.
Advances in cell and molecular biology and application: plant and animal breeding, environment, and therapeutics.
QP: LBS 242, BS 210, BS 211, BS 212
- 355. Philosophy of Technology**
Spring. 4(4-0) Interdepartmental with Philosophy.
P: LBS 133 or another Tier I writing course. R: Not open to freshmen.
Examination of the desirability of technology, its social forms, and its alternatives. Conventional, productivist, ecological progressive, and radical humanist outlooks.
QP: LBS 232 QA: LBS 361
- 470. Clarion Science Fiction and Fantasy Writers' Workshop**
Summer. 4 credits.
R: Approval of school; application required.
A six week, intensive workshop for science fiction writers early in their careers. Taught by professional writers and directed by MSU faculty. Competitive admission based on review of applicant manuscripts. Enrollment limited to 15-18.
QA: LBS 470
- 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: Not open to freshmen and sophomores. Open only to Lyman Briggs School majors.
Directed advanced studies involving at least two LBS curricular areas: biology, chemistry, physics, mathematics, science and technology studies, computing.
QA: LBS 490A
- 490B. Advanced Directed Study--Biology**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Not open to freshmen and sophomores. Open only to Lyman Briggs School majors.
Directed advanced studies in biology.
QA: LBS 490B
- 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: Not open to freshmen and sophomores. Open only to Lyman Briggs School majors.
Directed advanced studies in chemistry or physics.
QA: LBS 490C
- 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: Not open to freshmen and sophomores. Open only to Lyman Briggs School majors.
Directed advanced studies in mathematics.
- 490E. Advanced Directed Study--Science and Technology Studies**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.
R: Not open to freshmen and sophomores. Open only to Lyman Briggs School majors.
Directed advanced studies in Science and Technology Studies.
QA: LBS 490E
- 492. Senior Seminar**
Fall, Spring. 4(4-0)
P: LBS 239 or LBS 332 or LBS 333 or LBS 334 or LBS 335 or LBS 355 or LBS 490E. R: Open only to juniors and seniors in Lyman Briggs School.
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.
QA: LBS 491, LBS 492
- 493. Field Experience**
Fall, Spring. 1 to 10 credits. A student may earn a maximum of 10 credits in all enrollments for this course.
R: Not open to freshmen and sophomores. Open only to Lyman Briggs School majors.
Experiential learning related to the public or private practice of science and technology.
QA: LBS 493