

- 870 Techniques of Analyzing Unbalanced Research Data**  
Spring. 4(4-0) Interdepartmental with Animal Science; Crop and Soil Sciences; Fisheries and Wildlife; Horticulture. Administered by Department of Animal Science. RB: (STT 464) R: Open only to graduate students in the College of Agriculture and Natural Resources. SA: ANS 943 Not open to students with credit in ANS 943.

Linear model techniques to analyze biological research data characterized by missing and unequal number of observations in classes. Simultaneous consideration of multiple factors. Prediction of breeding values and estimation of population parameters from variance and covariance components.

- 881 Building and Implementing Watershed Management Plans**  
Fall, Spring, Summer. 3(3-0) Fall: Virtual University. Spring: Virtual University. Summer: Virtual University. Interdepartmental with Resource Development; Fisheries and Wildlife. Administered by Department of Community, Agriculture, Recreation and Resource Studies. RB: (RD 324 and ZOL 355 and RD 452) Not open to students with credit in RD 824.

Problem definition. Data collection. Public consultation. Program evaluation. Case studies include watershed planning in the Great Lakes region.

- 882 Watershed Assessments and Tools**  
Fall, Spring, Summer. 3(3-0) Fall: Virtual University. Spring: Virtual University. Summer: Virtual University. Interdepartmental with Resource Development; Fisheries and Wildlife. Administered by Department of Community, Agriculture, Recreation and Resource Studies. RB: (RD 452 and RD 881)

Techniques for assessing and predicting physical, chemical, biological, and socioeconomic conditions within a watershed. Water quality monitoring. Bio-assessment protocols. Pollutant loading models.

- 885 Leadership in Natural Resources and Environmental Management**  
Fall. 3(3-0) Interdepartmental with Fisheries and Wildlife; Park, Recreation and Tourism Resources; Agricultural Economics. Administered by Department of Fisheries and Wildlife.

Theory and practice of leadership in natural resource and environmental management. Integration across disciplinary and jurisdictional divisions.

- 890 Special Problems**  
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 7 credits in all enrollments for this course. R: Approval of department; application required.

Advanced individual study in an area of forestry.

- 891B Selected Topics in Plant Breeding and Genetics**  
Fall, Spring, Summer. 1 to 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Horticulture; Crop and Soil Sciences. Administered by Department of Horticulture. R: Open only to graduate students in Plant Breeding and Genetics or Genetics. Approval of department.

Selected topics in plant breeding.

- 892 Plant Breeding and Genetics Seminar**  
Fall, Spring, Summer. 1(1-0) A student may earn a maximum of 8 credits in all enrollments for this course. Interdepartmental with Horticulture; Crop and Soil Sciences. Administered by Department of Horticulture. Experience in review, organization, oral presentation, and analysis of research.

- 899 Master's Thesis Research**  
Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 99 credits in all enrollments for this course.  
Master's thesis research.

- 923 Advanced Environmental and Resource Economics**  
Fall. 3(3-0) Interdepartmental with Agricultural Economics; Economics; Park, Recreation and Tourism Resources; Resource Development. Administered by Department of Agricultural Economics. RB: (AEC 829 and EC 812A)

Advanced economic theory of environmental management and policy. Treatment of externalities and market and non-market approaches to environmental improvement. Topics in conservation and sustainable economic growth. Applications to research and policy.

- 925 Advanced Natural Resource Economics**  
Spring. 3(3-0) Interdepartmental with Agricultural Economics; Resource Development; Park, Recreation and Tourism Resources; Economics. Administered by Department of Agricultural Economics. RB: (EC 812A and AEC 829 and FOR 866) SA: AEC 991H

Economic theory of managing nonrenewable and renewable resources, including optimal use, the incentives for use under decentralized markets, and public policy design. Analysis of the co-evolution of economic and ecological systems.

- 941 Quantitative Genetics in Plant Breeding**  
Spring of even years. 3(2-2) Interdepartmental with Crop and Soil Sciences; Horticulture. Administered by Department of Crop and Soil Sciences. RB: (CSS 819 and STT 464)

Theoretical and genetic basis of statistical analysis of quantitative traits using genetic markers. Computational tools for the study of quantitative traits.

- 999 Doctoral Dissertation Research**  
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to Ph.D. students in Forestry.  
Doctoral dissertation research.

## FRENCH

## FRN

**Department of French,  
Classics, and Italian  
College of Arts and Letters**

- 101 Elementary French I**  
Fall, Spring, Summer. 4(4-1) Not open to students with credit in FRN 150.

Practice in using and understanding French to develop listening, speaking, reading, and writing skills. Pronunciation, grammar, vocabulary, and cultural topics.

- 102 Elementary French II**  
Fall, Spring. 4(4-1) P:M: (FRN 101) or designated score on French placement test. Not open to students with credit in FRN 150.

Further practice in using and understanding French to develop listening, speaking, reading, and writing skills. Pronunciation, grammar, vocabulary, and cultural topics.

- 150 Intensive Review of Elementary French**  
Fall, Spring. 5(5-1) P:M: Designated score on French placement test. RB: Two years of high school French or the equivalent. R: Open to students with high school credit in French. Not open to students with credit in FRN 101 or FRN 102.

Intensive review of elementary-level French for students who have had at least two years of French at the secondary level and who need to strengthen communication skills and knowledge of French language and culture.

- 201 Second-Year French I**  
Fall, Spring. 4(4-0) P:M: (FRN 102 or FRN 150) or designated score on French placement test.

Intermediate-level review and development of aural comprehension, speaking, reading, and writing skills. Topics in the cultures of the French-speaking world.

- 202 Second-Year French II**  
Fall, Spring. 4(4-0) P:M: (FRN 201)  
Further review and development of aural comprehension, speaking, reading, and writing skills. Topics in the cultures of the French-speaking world.

- 250 Intensive Intermediate French**  
Fall, Spring. 6(5-2) P:M: (FRN 102 or FRN 150) or designated score on French placement test. RB: Study Abroad experience in a French-speaking country. R: Approval of department. Not open to students with credit in FRN 201 or FRN 202.

Intensive intermediate-level French. Development of oral comprehensive, speaking, reading and writing skills. Topics in the cultures of the French-speaking world. Strengthen communication skills, cross-cultural understanding, critical thinking.

- 290 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Approval of department.

Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

- 320 Self-Expression in Writing (W)**  
Fall, Spring. 3(3-0) P:M: (FRN 202 or FRN 250) or designated score on French placement test. Completion of Tier I writing requirement.  
Writing practice in a variety of forms. Reading of excerpts from French and Francophone literature in order to enrich vocabulary and analyze style. Grammar review.
- 321 Oral Expression**  
Fall, Spring. 3(3-0) P:M: (FRN 202 or FRN 250) or designated score on French placement test.  
Present-day spoken French. Discussions on various aspects of French culture and social interaction, mastery of advanced vocabulary. Readings chosen from current magazines and newspapers and complemented by Web exercises and video materials.
- 330 French Phonetics**  
Fall, Spring. 3(3-0) P:M: (FRN 202 or FRN 250) or designated score on French placement test.  
Analysis of French pronunciation for listening and speaking.
- 340 Introduction to Reading French Literature (W)**  
Fall, Spring. 3(3-0) P:M: (FRN 202 or FRN 250) or designated score on French placement test. Completion of Tier I writing requirement.  
Close reading and interpretation of French drama, poetry, fiction, and other prose forms.
- 355 French Literature in English Translation**  
Spring of even years. 3(3-0) R: Not open to freshmen.  
Representative works and themes of French literature.
- 400 Reading French for Graduate Students**  
Spring. 3(3-0) R: Not open to freshmen or sophomores.  
Intensive study of French for graduate students needing a reading knowledge of the language.
- 415 Introduction to French Studies I: Metropolitan France**  
Fall. 3(3-0) P:M: (FRN 320 and FRN 340)  
Aspects of the culture of France in its many manifestations: literary, artistic, musical, linguistic. Emphasis on historical and social analysis of French cultural artifacts.
- 416 Introduction to French Studies II: Francophone Cultures**  
Spring. 3(3-0) P:M: (FRN 320 and FRN 340)  
Exploration of French culture in the Francophone world outside metropolitan France.
- 425 Advanced Studies in French Language**  
Fall. 3(3-0) P:M: (FRN 320) and (LIN 200 or LIN 401 or ROM 401)  
To broaden advanced students' capacities for self-expression. Accurate form and appropriate expression through translation, composition or creative writing. Examination of contrasting styles of expression in view of developing nuances.
- 430 French Linguistics**  
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (FRN 320 and FRN 330) and (LIN 200 or LIN 401 or ROM 401) R: Approval of department.  
Key issues in French linguistics and contrastive structures of French and English.
- 444 Business French**  
Fall. 3(3-0) P:M: (FRN 320)  
Development of functional business language skills through readings, discussions, and assignments based on materials dealing with the French economic system and France in world trade.
- 445 Theme-Based Seminar**  
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P:M: (FRN 415)  
Organized by themes such as: Francophone women, the uses of myth, the individual and society. Texts may be of diverse literary and artistic forms and from different historical periods.
- 446 History-Based Seminar**  
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P:M: (FRN 415)  
Organized by century or artistic period. Examination of the historical, intellectual, and artistic climate surrounding texts.
- 447 Genre-Based Seminar**  
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P:M: (FRN 415)  
Based on significant literary or artistic genre such as poetry, novel, short story, essay, theater, film or musical theater from either a synchronic or diachronic perspective.
- 490 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Not open to freshmen or sophomores. Approval of department.  
Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.
- 491 Special Topics in French**  
Fall, Spring. 3(3-0) R: Not open to freshmen or sophomores. Approval of department.  
Special topics supplementing regular course offerings proposed by faculty on a group study basis.
- 492 Senior Writing Project**  
Fall, Spring, Summer. 1(1-0) R: Open only to seniors in French.  
Research and preparation of a paper on an interdisciplinary subject that synthesizes at least three areas of a major's undergraduate education. Students work under the supervision of a faculty member.
- 800 Current Approaches to French Instruction**  
Fall. 3(3-0)  
Theoretical and practical view of methodologies of teaching French.
- 805 Evolution of the French Language**  
Fall of even years. 3(3-0)  
Diachronic examination of the phonological, morphological, and syntactic developments of French as it evolved from Latin.
- 806 Topics in French Linguistics**  
Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
Key issues in theoretical and applied French linguistics. Syntax, morphology, phonology, and semantics. Foreign language acquisition.
- 807 Topics in the Development of French Culture**  
Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
French culture through the history of ideas, through the evolution of institutions, or through literature and the related arts.
- 810 Studies in Medieval French Literature.**  
Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
Works of major writers of the French Middle Ages.
- 815 Studies in 16th-Century French Literature**  
Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
Works of major prose writers and poets of the Renaissance and Reformation.
- 820 French Literature of the 17th Century**  
Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
Works of major writers of the seventeenth century.
- 825 Studies in 18th-Century French Literature**  
Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
Works of major writers of the French Enlightenment.
- 830 Studies in 19th Century Literature**  
Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
Major authors and selected topics in poetry, prose, and drama of the nineteenth century.
- 835 Studies in 20th Century Literature**  
Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
Spiritual, intellectual, psychological, and aesthetic conflicts in texts with world-wide impact.
- 850 Introduction to Critical Theory**  
Fall. 3(3-0)  
Fundamentals of critical theory emphasizing the evolution of French and Francophone thought. Topics such as structuralism, deconstruction, post-modernism, feminism, post-colonialism, epistemology, psychology, and ethics.
- 890 Independent Study**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 9 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.
- 891 Special Topics in French**  
Fall, Spring, Summer. 3(3-0) 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.

## French—FRN

- 893 Interdisciplinary Seminar**  
Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with German; English; Spanish. Administered by Department of Linguistics and Germanic, Slavic, Asian and African Languages. R: Approval of department.  
Examination of a theme, topic, or genre from several different national and disciplinary perspectives in the appropriate cultural and socio-historical context. Significant texts and important critical analysis selected from Great Britain, Spain, France, Germany, the Americas, and others.
- 999 Doctoral Dissertation Research**  
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Approval of department.  
Doctoral dissertation research.

## GENERAL BUSINESS AND BUSINESS LAW

## GBL

### Department of Finance The Eli Broad College of Business and The Eli Broad Graduate School of Management

- 323 Introduction to Business Law**  
Fall, Spring. 3(3-0) R: Open only to students in programs for which GBL 323 is a catalog-listed requirement. Not open to students with credit in GBL 395 or GBL 395H.  
Introduction to the legal system. Basic concepts of constitutional law, torts, contracts, and product liability. Administrative law and government regulations.
- 395 Law, Public Policy, and Business**  
Fall, Spring, Summer. 3(3-0) R: Open only to juniors or seniors in The Eli Broad College of Business. Not open to students in The School of Hospitality Business. Not open to students with credit in GBL 395H or GBL 323.  
Structure of the legal system. Legal environment of business: constitutional law, torts, contracts, and product liability. Administrative law and government regulation of business.
- 395H Law, Public Policy, and Business -- Honors (W)**  
Fall. 3(3-0) P:M: Completion of Tier I writing requirement. R: Open only to juniors or seniors in the Honors College. Not open to students with credit in GBL 395.  
Structure of the legal system and basic concepts of constitutional law, torts, contracts, and product liability. Administrative law and government regulation of business.

- 420 Role of Law and Lawyers in Society (W)**  
Fall, Spring. 3(3-0) P:M: (GBL 395 or GBL 395H) and completion of Tier I writing requirement. R: Open only to seniors or approval of department.  
Law and its relationship to economics, business, and social justice. Comparative law. Legislative and judicial processes. The role of lawyers. Overview of legal education.
- 451 Law of Commercial Transactions**  
Spring. 3(3-0) R: Open only to seniors or graduate students in Accounting.  
Law of contracts and sales, commercial paper, secured transactions, consumer credit, and debtor-creditor relationships.
- 460 International Law and Business**  
Spring. 3(3-0) P:M: (GBL 395 or GBL 395H) R: Open only to seniors or graduate students.  
The impact of international law on business practices. Government regulation of international business.
- 490 Independent Study**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (GBL 395 or GBL 395H) R: Open only to seniors or graduate students. Approval of department.  
Program of observation and work in selected business firms and government. Supervised independent research on selected legal topics.
- 491 Topics in Business Law**  
Fall of even years. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course. P:M: (GBL 395 or GBL 395H)  
Current and emerging issues in business law to supplement and enrich existing courses.
- 890 Independent Study**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: (GBL 848) R: Open only to graduate students in Business. Approval of department.  
Faculty-supervised independent study.

## GENETICS

## GEN

### Genetics Program College of Natural Science

- 800 Genetics Seminar**  
Fall, Spring, Summer. 1(1-0) A student may earn a maximum of 12 credits in all enrollments for this course.  
Critical analysis of current literature. Student presentations.
- 810 Theory and Practice of Teaching Genetics**  
Fall, Spring, Summer. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. RB: One year of graduate coursework and satisfactory completion of an undergraduate-level genetics course. International students must have passed the SPEAK exam. R: Approval of college.  
Techniques and challenges in teaching microbial, molecular, or human genetics at the college level.
- 825 Molecular and Biochemical Bases of Human Disease**  
Spring. 3(3-0) Interdepartmental with Zoology. Administered by Department of Zoology. RB: (ZOL 341) or equivalent general genetics course.  
Medical genetics. Molecular, biochemical, and diagnostic issues related to human disease. Disease pathophysiology. Ethical, legal, and social issues related to human genetics research.
- 835 Eukaryotic Molecular Genetics**  
Spring. 3(3-0) Interdepartmental with Microbiology and Molecular Genetics. Administered by Department of Microbiology and Molecular Genetics. RB: (BMB 462 and ZOL 341) R: Open only to graduate students in the colleges of Agriculture and Natural Resources, Engineering, Human Medicine, Natural Science, Osteopathic Medicine, and Veterinary Medicine.  
Gene structure and function in animals, plants, and fungi. Basic aspects of modern human genetics and the genetic basis for disease. Molecular genetic analyses. Eukaryotic modeling systems.
- 842 Population Genetics, Genealogy and Genomics**  
Fall. 3(3-0) Interdepartmental with Forestry; Animal Science; Crop and Soil Sciences; Fisheries and Wildlife; Horticulture. Administered by Department of Forestry. RB: Pre-calculus, basic genetics  
Population genetic processes underlying patterns of molecular genetic variation. Genealogical approaches to the study of genomic diversity, phylogenetic reconstruction, and molecular ecology.
- 851 Molecular Entomology**  
Fall of odd years. 3(3-0) Interdepartmental with Entomology. Administered by Department of Entomology.  
Analysis of molecular processes unique to insects, and their potentials for genetic engineering.
- 880 Laboratory Rotation**  
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to Ph.D. majors in Genetics.  
Participation in research with faculty members.
- 899 Master's Thesis Research**  
Fall, Spring, Summer. 1 to 9 credits. A student may earn a maximum of 36 credits in all enrollments for this course.  
Master's thesis research.
- 999 Doctoral Dissertation Research**  
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 120 credits in all enrollments for this course. R: Open only to Ph.D. students in Genetics.  
Doctoral dissertation research.