

836. Plant Evolution and the Origin of Crop Species

Fall of even years. 3(3-0) Interdepartmental with Horticulture; Crop and Soil Sciences. Administered by Horticulture. P: CSS 350.

Cultural and biological aspects of the evolution of domestic plants. Origin and diversity of cultivated plants.

837. Water Law

Spring. 3(3-0) Interdepartmental with Resource Development; and Agricultural Economics. Administered by Resource Development. P: RD 430.

Legal principles applicable to surface water and groundwater, private and public water rights, and controls over water resources. Cases, statutes, and administrative procedures.

838. Land Use Law

Spring. 3(3-0) Interdepartmental with Resource Development; Agricultural Economics; and Urban Planning. Administered by Resource Development. P: RD 430.

Public and private land use controls in the U.S. Civil rights, housing, energy problems, growth management, waste management, and land conservation. Cases, statutes and other regulations. SA: RD 834

842. Population Genetics, Genealogy and Genomics

Fall. 3(3-0) Interdepartmental with Animal Science; Crop and Soil Sciences; Genetics; Fisheries and Wildlife; and Horticulture. 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.

852. Systems Modeling and Simulation

Fall of even years. 3(3-0) Interdepartmental with Fisheries and Wildlife; Biosystems Engineering; and Resource Development. Administered by Fisheries and Wildlife. P: STT 422 or STT 442 or STT 464 or GEO 463.

General systems theory and concepts. Modeling and simulation methods. Applications of systems approach and techniques to natural resource management, and to ecological and agricultural research.

853. Applied Systems Modeling and Simulation for Natural Resource Management

Spring of odd years. 3(2-2) Interdepartmental with Fisheries and Wildlife; Biosystems Engineering; Resource Development; and Zoology. Administered by Fisheries and Wildlife. P: FW 820 or BE 486 or ZOL 851 or approval of department. R: Open only to seniors and graduate students

Mathematical models for evaluating resource management strategies. Stochastic and deterministic simulation for optimization. System control structures. Team modelling approach.

864. Agroforestry Systems

Spring of even years. 3(3-0) R: Open only to graduate students majors in Botany and Plant Pathology, Crop and Soil Sciences, Forestry, and Horticulture.

Biophysical and ecological aspects of agroecology and agroforestry. Nutrient cycling and the soil, root, tree and crop interface.

866. Economics of Renewable Resources

Spring of odd years. 3(2-2) Interdepartmental with Resource Development. P: AEC 829 or EC 803 or EC 805

Applications of economic theory and analysis to renewable natural resources problems. Focus on renewable resource interactions, including multiple-use forestry and agroforestry.

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; and Crop and Soil Sciences. Administered by 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; and Crop and Soil Sciences. Administered by 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.

923. Advanced Environmental and Resource Economics

Spring of even years. 3(3-0) Interdepartmental with Agricultural Economics; Economics; Park, Recreation and Tourism Resources; and Resource Development. Administered by Agricultural Economics. P: (AEC 829 and EC 805)

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. Environmental and Resource Economics Research

Spring of odd years. 3(3-0) Interdepartmental with Agricultural Economics; Resource Development; Park, Recreation and Tourism Resources; and Economics. Administered by Agricultural Economics. P: (AEC 829 and EC 805)

Topics such as contingent or non-market valuation, institutional analysis, pollution prevention, environmental quality and location, recreational demand modeling, and environmental risk management. Research process in environmental and resource economics.

SA: AEC 991H

930. Advanced Forest Genetics

Fall of odd years. 2(1-2) Interdepartmental with Crop and Soil Sciences; and Horticulture. P: HRT 819 or HRT 836.

Applications of genetics, plant breeding, and biotechnology to the improvement, and preservation of diversity, of tree species.

941. Quantitative Genetics in Plant Breeding

Spring of even years. 3(3-0) Interdepartmental with Crop and Soil Sciences; and Horticulture. Administered by Crop and Soil Sciences. P: CSS 450, STT 422.

Theoretical genetic basis of plant breeding with emphasis on traits exhibiting continuous variation. Classical and contemporary approaches to the study and manipulation of quantitative trait loci.

943. Techniques of Analyzing Unbalanced Research Data

Spring. 4(4-0) Interdepartmental with Animal Science; Crop and Soil Sciences; Fisheries and Wildlife; and Horticulture. Administered by Animal Science. P: STT 464. R: Open only to graduate students in the College of Agriculture and Natural Resources.

Linear model techniques to analyze research data characterized by missing and unequal number of observations in classes. Simultaneous consideration of multiple factors. Estimable comparisons. Hypothesis testing. Computational strategies. Variance and covariance components. Breeding values.

SA: ANS 943

976. Multivariate Methods in Agriculture and Natural Resources

Spring. 4(4-0) Interdepartmental with Animal Science; and Fisheries and Wildlife. P: STT 422, MTH 314. R: Open only to graduate students in the College of Agriculture and Natural Resources and in the Interdepartmental Graduate Specializations in Ecology and Evolutionary Biology.

Application of multivariate methods to research problems. Hotelling's T-test, profile analysis, discriminant analysis, canonical correlation, principal components, principal coordinates, correspondence analysis, and cluster analysis.

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.

FRENCH

FRN

**Department of Romance and
Classical Languages
College of Arts and Letters**

101. Elementary French I

Fall, Spring. 4(4-1) R: No previous experience in French or designated score on French placement test. 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.

Descriptions—French of Courses

102. Elementary French II

Fall, Spring. 4(4-1) P: 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. Review of Elementary French

Fall, Spring. 3(3-1) R: Open to students with high school credit in French and designated score on French placement test. Not open to students with credit in FRN 101 or FRN 102.

Review of college first-year French for students who had the language in high school and who need to strengthen communication skills, vocabulary, grammar, and pronunciation before study at the 200 level.

201. Second-Year French I

Fall, Spring. 4(4-0) P: 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: FRN 201.

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

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. Grammar and Composition (W)

Fall, Spring. 3(3-0) P: FRN 202 or designated score on French placement test. R: Completion of Tier I writing requirement.

Systematic review of grammar. Extensive writing in French.

330. French Phonetics

Fall, Spring. 3(3-0) P: FRN 202 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: FRN 202 or designated score on French placement test. R: Completion of Tier I writing requirement.

Close reading and interpretation of French drama, poetry, fiction, and other prose forms.

350. The Contemporary French Scene

Fall. 3(3-0) P: FRN 320, FRN 340.

Institutions, history, arts, and major sociopolitical issues of France and its former colonies from 1945 to the present, with an emphasis on the Fifth Republic; class conducted in French.

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 and sophomores.

Intensive study of French for graduate students needing a reading knowledge of the language.

410. Survey of French Literature I

Fall. 3(3-0) P: FRN 320, FRN 340.

French literature from the Middle Ages to the Enlightenment.

420. Survey of French Literature II

Spring. 3(3-0) P: FRN 320, FRN 340.

French literature from the Enlightenment to the present.

425. Advanced Studies in French Language

Fall. 3(3-0) P: FRN 320, LIN 200 or LIN 401 or ROM 401.

Translation, stylistics, composition, creative writing, prescriptive grammar.

430. French Linguistics

Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P: FRN 320, FRN 330; LIN 401 or ROM 401. R: Approval of department.

Key issues in French linguistics and contrastive structures of French and English.

440. Francophone Cultures and Civilizations

Spring. 3(3-0) P: FRN 350.

Social, political, intellectual, and artistic life of France and the French-speaking world in relation to the French language, literatures, and other cultural media.

450. French Literature of the Middle Ages

Fall of even years. 3(3-0) P: FRN 410, FRN 420.

Major currents of the Middle Ages as reflected in the writings of representative authors of the period.

455. French Literature of the 16th Century

Spring of odd years. 3(3-0) P: FRN 410, FRN 420.

Literature reflecting major currents of the Renaissance and Reformation.

460. French Literature of the 17th Century

Fall of odd years. 3(3-0) P: FRN 410, FRN 420.

Literature reflecting major currents of the Baroque and classical periods.

465. French Literature of the 18th Century

Spring of even years. 3(3-0) P: FRN 410, FRN 420.

Literature reflecting major currents of the French Enlightenment.

470. French Literature of the 19th Century

Fall of even years. 3(3-0) P: FRN 410, FRN 420.

Literature reflecting major currents of nineteenth-century France.

475. French Literature of the 20th Century

Spring of odd years. 3(3-0) P: FRN 410, FRN 420.

Literature reflecting major currents of the twentieth-century France.

480. Literature of Quebec

Fall of odd years. 3(3-0) P: FRN 410, FRN 420.

Major works of Quebec literature from the seventeenth-century to the present.

485. Francophone Literatures of the Third World

Spring of even years. 3(3-0) P: FRN 410, FRN 420.

Francophone literatures of West Africa, the Maghreb, Madagascar, the Caribbean, and Vietnam.

490. Independent Study

Fall, Spring. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Not open to freshmen and 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 and 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.

840. French Quebecois Literature

Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. R: Approval of department.

Major authors and selected topics in the poetry, prose, and drama of Quebec.

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 6 credits in all enrollments for this course. R: Approval of department.

Special topics supplementing regular course offerings proposed by faculty for graduate students on a group study basis.

999. Doctoral Dissertation Research

Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 24 credits in all enrollments for this course. R: Approval of department.

GENERAL BUSINESS AND BUSINESS LAW GBL

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

395. Law, Public Policy, and Business
Fall, Spring, Summer. 3(3-0) R: Open only to juniors or seniors. Not open to students with credit in GBL 395H.

Structure of the legal system. Basic concepts of 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: 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: (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.

447. Hospitality Law

Fall, Spring. 3(3-0) P: (GBL 395 or GBL 395H) R: Open only to seniors or graduate students in The School of Hospitality Business.

Legal aspects of hospitality industry, including contracts and sales, torts, commercial paper, and organization. Dynamics of the changing work force and employment discrimination. Franchising.

451. Law of Commercial Transactions
Spring. 3(3-0) P: (GBL 395) R: Open only to seniors or graduate students.

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: (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.

480. Corporate and Professional Social Responsibility

Spring. 3(3-0) P: (GBL 395) R: Open only to seniors or graduate students.

Institutionalization of American working life, large business institutions, and the law. Control of large business institutions. Social obligations of corporations and professions. Impact of institutional values on individual values.

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: (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.

848. Legal Environment of Business
Fall, Spring. 3(3-0) R: Open only to students in the Professional Accounting, Master of Business Administration programs, and to students in programs for which GBL 848 is a catalog-listed requirement.

The legal, political, and social environment of business and the structural framework in which law functions.

859. Business Legal Environment
Summer. 2(2-0) R: Open only to Master's students in the Advanced Management Program.

Critical analysis of government regulation of business from legal, political, and social perspectives. An examination of moral concepts and social policy underlying government regulation.

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. P: GBL 848. R: Open only to graduate students in Business. Approval of department.

Faculty-supervised independent study.

GENETICS GEN

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.

835. Eukaryotic Molecular Genetics
Spring. 3(3-0) Interdepartmental with Microbiology. Administered by Microbiology. P: BCH 462, 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.

841. Chromosome Structure and Genetics
Spring of even years. 3(3-0) Interdepartmental with Zoology. Administered by Zoology. R: Approval of department. Classical and molecular genetics of chromosome structure and behavior in mitosis and meiosis. Synapsis and disjunction, exchange, centromeres, euchromatin, heterochromatin and transposable elements.