

Pharmacy (PHRM)

Courses for the Doctor of Pharmacy (Pharm.D.)

Associate Dean: Kenneth A. Speranza, Sr., Ph.D.
Office: Room 152, School of Pharmacy, Hewitt Building

For major requirements, see the School of Pharmacy section of this *Catalog*.

The following courses are open only to students enrolled in the professional program of the School of Pharmacy.

195. Special Topics Lecture

Either semester. Credits and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

200. Evaluation Skills

First semester. Three credits. Three class periods. *Bahr; White*

Development of skills needed to critically evaluate and assess data published in pharmacy literature. This course will include an introduction to computer-based software programs, fundamentals of biostatistics, drug literature evaluation, literature search programs and fundamentals of epidemiology.

201. Pharmaceutical Care I

First and second semester. One credit total. Hours by arrangement. *James*

Provision of a historical perspective of pharmacy practice, development of a theoretical foundation for the practice of pharmaceutical care and experiential opportunities for the student to begin to develop skills in providing pharmaceutical care.

202. Health Care Organization

First semester. One credit. One class period. Prerequisite: ECON 111. *Speranza*

A study of the United States health care system, with emphasis given to its historical development, its activities, and the major organizational forms and financing mechanisms supporting it and consideration of pharmacy's role within the current and future United States health care system.

203. Social And Behavioral Aspects Of Pharmacy

First semester. Two credits. Two class periods. Prerequisite: SOCI 107 and COMM 105. *Facchinetti*

Social development of pharmacists in the twentieth Century. The need for newer roles. Competence to provide progressive cognitive services. Social and organizational support necessary to provide pharmacy care. Behavioral aspects of patients pertaining to the provision of pharmaceutical care.

205. Principles of Pharmacoeconomics

First semester. Two credits. One class period. Prerequisite: ECON 111. *McCarthy*

A study of the economic forces within the health care environment affecting the practice of pharmacy focusing on the various types of pharmacoeconomic methodologies, including an assessment of their strengths and weaknesses, and their validity and applicability in clinical practice.

206. Interpersonal Skills Development in Pharmacy Practice

Second semester. Two credits. One class period and one two-hour laboratory. Prerequisite: COMM 105; PHRM 202, 203, 204, 205. *Facchinetti*

Principles of interpersonal communications: effective questioning, empathic listening, reflective responding, assertiveness, and other socio-behavioral aspects of patient care. Skill development in patient counseling and interprofessional communications.

207. Pharmaceutical Care II

First and second semester. One credit total. Hours by arrangement. *McCarthy*

208. Pharmacy Law and Ethics

Second semester. Three credits. Three class periods. Prerequisite: PHRM 206. *Speranza*

A study of federal and state laws and ethical principles governing pharmacy practice. Case-study practice scenarios allow students to make pharmaceutical care decisions based upon legal and/or ethical reasoning.

208W. Pharmacy Law and Ethics

Prerequisite: PHRM 206; ENGL 105 or 110 or 111 or 250.

209. Pharmaceutical Care III

First and second semester. One credit total. Hours by arrangement. Prerequisite: PHRM 207. *Jeffery*

Continuation of historical perspective of pharmacy practice, development of a theoretical foundation for the practice of pharmaceutical care and experiential opportunities for the student to begin to develop skills in providing pharmaceutical care.

210. Non-Prescription Medication

Second semester. Three credits. Three class periods. *Dang*

Self-medication based on a foundation of pharmaceutical technology, pharmacology and therapeutics. Emphasis will be placed on the role of the pharmacist in enhancing the rational selection and use of non-prescription (OTC) medications by consumers.

211. Introduction to Clinical Practice

Second semester. Two credits. Hours by arrangement. Prerequisite: PHRM 255, concurrent with PHRM 256. *Campbell*

Development of skills necessary in professional practice of pharmacy. Emphasis on patient assessment skills necessary for providing pharmaceutical care and approaches in conducting medication regimen review and pharmacological consultation.

212. Pharmacy Practice Laboratory

Second semester. Three credits. One two-hour lecture and three-hour laboratory period. Prerequisite: PHRM 255. Corequisite: PHRM 256. *James*

Laboratory course focusing on the basic skills necessary to provide pharmaceutical care with emphasis on dispensing as well as the skills and motivation to expand pharmacist services including wellness screenings, patient education, collaborative practice, and disease management.

213. Community Pharmacy Management

First semester. Two credits. One class period. *Speranza*

A study of the concepts and theories, with case study application, underlying the successful management of a community pharmacy practice.

214. Advanced Compounding

First semester. Two credits. One class period and one 3-hour laboratory. Prerequisite: PHRM 247.

Advanced techniques and knowledge in prescription compounding will be applied to the preparation of extemporaneously prepared dosage forms that meet the needs of individual patients.

219. General Principles and Organ System Overview

First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science and math requirements of the first two years. *Aneskievich*

Basic principles of physiology, pharmacology and receptor site theory and overview of cell biology and all the organ systems.

220. Nervous System

Second semester. Five credits. Five class periods. Prerequisite: PHRM 219. *Gianutsos*

Functions of the autonomic, somatic and central nervous systems; pharmacological effects and mechanism of action of drugs and biotechnologically-derived products used to treat diseases of the autonomic nervous system, sensory system disorders and neurological and psychiatric diseases, and structural features imparting biological activity and the design of drugs used to treat diseases of the autonomic nervous system, sensory system disorders, and neurological psychiatric diseases.

221. Cardiovascular/Renal/Respiratory Systems

First semester. Four credits. Four class periods. Prerequisite: PHRM 220. *Langner*

A study of the physiology, pharmacology, and structure-activity relationships of drugs affecting the cardiovascular, renal, and respiratory systems.

221W. Cardiovascular/Renal/Respiratory Systems

Prerequisite: PHRM 220; ENGL 105 or 110 or 111 or 250.

222. Endocrine/Gastrointestinal Systems

Second semester. Three credits. Three class periods. Prerequisite: PHRM 221. *Manautou*

A study of the physiology, pharmacology, and structure-activity relationships of drugs affecting the gastrointestinal and endocrine systems.

223. Pharmacology Discussion / Lab

First semester. One credit. Three hours of laboratory/conference. Prerequisite: PHRM 222. *Aneskievich*

Continuing development of problem solving based skills. Topics and issues will be related to pharmacology didactic concepts and theory acquired through the first two professional years.

224. Chemotherapy

First semester. Two credits. Two class periods. Prerequisite: PHRM 222, 234, 254; PVS 297. *D. Hubbard*

Development of an understanding of the clinical indications, pharmacology, adverse drug events and structure activity relationships of drugs used in the treatment of infectious diseases.

225. Toxicology

First semester. Two credits. Two class periods. Prerequisite: PHRM 222, 234, 254; PVS 297. *Grant*

Development of an understanding of basic principles of toxicology which determine effects of therapeutic, occupational, or environmental chemicals on human health. Rationale for and nature of procedures required during preclinical safety assessment of therapeutic agents will be discussed.

226. Immunology

Second semester. Three credits. Three class periods. Prerequisite: PHRM 222, 234, 254; PVS 297. *Hubbard*

Development of an understanding of principles of immunology focusing on mechanisms underlying disease processes and the role of immunotherapeutics and biopharmaceuticals in altering outcome of immunologic disease.

233. Pharmaceutical Bio-Organic Chemistry I

First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science and math requirements of the first two years. *Pavlopoulos*

Development of the fundamental medicinal and natural products chemistry knowledge, as well as the critical thinking and problem solving skills to apply this knowledge which will be required in the provision of pharmaceutical care and will serve as the foun-

dition for the Pharmacy graduate's continuing professional maturation, education and development.

234. Pharmaceutical Bio-Organic Chemistry II

First semester. Three credits. Three class periods. Prerequisite: PHRM 233. *Bouvier*
A continuation of PHRM 233.

234W. Pharmaceutical Bio-Organic Chemistry II

Prerequisite: PHRM 233; ENGL 105 or 110 or 111 or 250.

235. Pharmaceutical Bio-Organic Chemistry Laboratory

Second semester. One credit. One laboratory session and one pre-laboratory session. Must be taken concurrently with PHRM 234. *Pavlopoulos*

A study of organic compounds, having pharmaceutical significance with ten laboratory exercises which include physical properties and chemical reactivities of drug molecules, their chromatographic analysis, the study of enzymes, and biotechnological techniques and their isolation from natural products.

242. Solution and Solid Dosage Forms

First semester. Four credits. Four class periods. Prerequisite: Must have satisfied all science requirements of first two years. *Kalonia*

An investigation of the principles underlying the formulation, dissolution, stability, and release of drug products for optimum delivery. Solution dosage forms, parenteral formulations, tablets and capsules are considered in detail.

242W. Solution and Solid Dosage Forms

Prerequisite: Must have satisfied all science requirements of first two years; ENGL 105 or 110 or 111 or 250.

244. Dosage Forms Preparation Laboratory

First semester. One credit. One discussion period and one three-hour laboratory. Prerequisite: Must have satisfied all science requirements of first two years. To be taken concurrently with PHRM 242. *Pikal*

Extemporaneous preparation of sterile and non-sterile dosage forms, with particular attention to solutions, solids and dispersed systems.

245C. Pharmacokinetics

First semester. Three credits. Three class periods. Prerequisite: Must have satisfied all science requirements of first two years. PHRM 220, 234. *Sweeney*

A study of the basic principles of Pharmacokinetics and their application to the rational design of both dosage forms and dosing regimens, optimizing the latter to further the likelihood of safe effective drug therapy in a variety of clinical situations.

246. Dispersed Systems

Second semester. Three credits. Three class periods. Prerequisite: PHRM 242. *Burgess*

Investigation of the principles and factors affecting the performance of dosage forms classified as dispersed systems: suppositories, aerosols, emulsions, suspensions, transdermals, and ointments.

247. Dosage Forms Preparation Laboratory II

Second semester. One credit. One class period and one three-hour laboratory. Prerequisite: Must be taken concurrently with PHRM 246. *Bogner*

Extemporaneous preparation of sterile and non-sterile dosage forms, with particular attention to solutions, solids and dispersed systems.

253. Therapeutics I

First semester. Three credits. One two-hour class period and one two-hour conference. Prerequisite: PHRM 220 and concurrent with PHRM 221. *Caley*

A study of the clinical features of diseases of the central nervous system and the provision of pharmaceutical care to psychiatric, neurologic, and pain syndrome patients. Drug related problems concerned with the treatment of these patients is emphasized.

254. Therapeutics II

Second semester. Four credits. Three lecture hours and three conference hours. Prerequisite: PHRM 253; open to Pharmacy students only. *Wang*

A study of the etiology, clinical manifestations, and treatment regimens of common acute and chronic cardiovascular, critical care, respiratory, renal, and women's health diseases with emphasis on solving drug-related problems and the application of pharmacokinetic principles of selected drugs in these clinical situations.

254W. Therapeutics II

Prerequisite: PHRM 253; ENGL 105 or 110 or 111 or 250.

255. Therapeutics III

First semester. Three credits. Two class periods. One two-hour class period and one two-hour conference. *Chapron*

Development of skills necessary to make meaningful therapeutic contributions to the investigation and management of patients with various renal, electrolyte, acid-base, endocrine and metabolic disorders and further develop the student's ability to apply problem-solving strategies in these clinical situations.

256. Therapeutics IV

Second semester. Four credits. Three lecture hours and three conference hours. Prerequisite: PHRM 255; open to Pharmacy students only. *Aeschlimann*

Development of skills necessary to make meaningful therapeutic contributions to the pharmacotherapeutic management of patients with infectious diseases and malignancies and the application of problem-solving strategies in these clinical situations.

257. Clinical Pharmacokinetics

First semester. One credit. Prerequisite: PHRM 245, 254; open to Pharmacy students only. *Sweeney*

Development of an understanding of drug dosing regimen design with application to these concepts to relevant drugs. Emphasis will be placed on recognition of special dosing situations due to potentially altered pharmacokinetics and drugs exhibiting unique pharmacokinetics.

262. Professional Experience in Community Pharmacy *

Either semester. Four credits. Hours by arrangement. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *James*

The student will apply drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on further development of skills in patient assessment and patient education in optimizing response to pharmacotherapy. Introduction to the administrative aspects of the provision of pharmaceutical care in the community pharmacy is provided.

263. Professional Experience in Institutional Pharmacy I

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply pharmacy knowledge and skills to the provision of pharmacy services and pharmaceutical care in an institutional setting. Topics include pharmaceutical procurement and distribution, quality control, formulary system, provision of drug information, inpatient and outpatient provision of pharmaceutical care, and administrative aspects of institutional pharmacy.

264. Professional Experience in Ambulatory Care Pharmacy *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Jeffery*

The student will apply knowledge of disease therapeutics and communication skills to the provision of pharmaceutical care in the ambulatory setting. Emphasis is on optimizing medication-related outcomes in patients through medication assessment, multidisciplinary treatment planning, efficacy and safety assessment, and patient education.

265. Professional Experience in General Medicine *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Folstad*

The student will apply knowledge of therapeutics of general medical disorders to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on rational selection and use of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

Electives, minimum of 5 (one month each). At least 2 of the electives must be direct patient contact.

Direct patient contact indicated by *

266. Professional Experience in Cardiology *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *White*

The student will apply knowledge of therapeutics of cardiovascular disorders to the provision of pharmaceutical care in cardiology patients. Emphasis is on optimization of medication-related outcomes in critically-ill cardiac patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

267. Professional Experience in Infectious Disease *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Aeschlimann*

The student will apply knowledge of pharmacotherapy of infectious disease to the provision of pharmaceutical care to infectious disease inpatients. Emphasis is on optimization of medication-related outcomes in patients with serious infectious diseases through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

268. Professional Experience in Oncology *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Pham*

The student will apply knowledge of therapeutics of adult neoplastic disorders to the provision of pharmaceutical care to oncology patients. Emphasis is on rational drug selection of curative or palliative medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

269. Professional Experience in Psychiatry *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Caley*

The student will apply knowledge of the therapeutics of psychiatric disorders and communication skills to the provision of pharmaceutical care to psychiatric inpatients. Emphasis is on the optimization of medication-related outcomes in psychiatric patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

270. Professional Experience in Pediatrics *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply knowledge of the therapeutics of pediatric disorders to the provision of pharmaceutical care to non-intensive care pediatric inpatients. Emphasis is on the optimization of medication-related outcomes in pediatric patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

271. Professional Experience in Geriatrics *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Chapron, Jeffery*

The student will apply knowledge of therapeutics of chronic and acute disorders in the elderly to the provision of pharmaceutical care in a skilled nursing facility. Emphasis is on rational selection of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes in geriatric patients is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

272. Professional Experience in Community Practice II *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *James*

A continuation of PHRM 262. The student will expand the application of drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on continued development of patient assessment and patient education skills in optimizing response to medications.

273. Professional Experience in Critical Care *

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *White*

The student will apply knowledge of pharmacotherapy of major medical disorders and of post-surgical drug therapy to the provision of pharmaceutical care to critical care patients in medical, surgical, and specialized intensive care units. Emphasis is on optimization of medication-related outcomes in seriously-ill patients through medication assessment, multidisciplinary treatment planning, and efficacy and safety monitoring.

274. Professional Experience in Dermatology

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply knowledge of pharmacotherapy of common dermatological diseases to the provision of pharmaceutical care to patients with these diseases. Emphasis is on optimization of medication-related outcomes in patients with common dermatological disorders through past and current medication assessment, efficacy and safety monitoring, and patient education.

275. Professional Experience in Drug Control

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply knowledge of pharmacy and state and Federal pharmacy laws to the drug control activities of the Drug Control Division of the Department of Consumer Protection of the State of Connecticut. Emphasis is on active participation in daily activities of drug control officers in enforcing state and Federal drug control laws.

276. Professional Experience in Emergency Medicine

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply knowledge of pharmacotherapy of medical, surgical, toxicologic, and psychiatric emergencies to the provision of pharmaceutical care for adults and children treated in the emergency department. Emphasis is on optimization of medication-related outcomes in patients in need of emergency treatment, including medication assessment, efficacy and safety monitoring, and patient education.

277. Professional Experience in Home Health Care

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Jeffery*

The student will apply knowledge of pharmacy practice and skills in patient interaction to the provision of pharmaceutical care to patients in their homes. Emphasis is on optimization of medication-related outcomes in patients with common medical disorders served by home health care pharmacists, including medication assessment, efficacy and safety monitoring, and patient education.

278. Professional Experience in Institutional Pharmacy II

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

A continuation of PHRM 263. The student will expand application of pharmacy knowledge and skills to the provision of pharmacy services in an institutional setting. Emphasis is on problem-solving project activity related to the provision of pharmaceutical care by the Department of Pharmacy.

279. Professional Experience in Industry

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Chapron*

The student will apply knowledge of pharmacy and pharmaceutical science to the practice of pharmacy in the pharmaceutical industry. Emphasis is on development of skills needed in basic pharmaceutical science, information dissemination, drug development, and product marketing.

280. Professional Experience in Managed Care

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Jeffery*

The student will apply pharmacy knowledge and communication skills to the practice of managed care pharmacy. Emphasis is on the development of strategies that optimize pharmacotherapy of major medical diseases, surgical procedures, and psychiatric disorders within the economic constraints of a managed care health care delivery system.

281. Professional Experience in Nuclear Pharmacy

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply pharmaceutical science knowledge and communication skills to the provision of pharmaceutical care in nuclear pharmacy. Emphasis is on optimization of therapeutic outcomes related to diagnostic and therapeutic use of radioisotopes, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

282. Professional Experience in Nutrition

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply knowledge of therapeutics of nutritional disorders to the provision of pharmaceutical care to patients with these disorders. Emphasis is on optimization of medication-related outcomes in nutrition disorder patients through current and past medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

283. Professional Experience in Obstetrics/Gynecology

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply knowledge of pharmacotherapy of OB-GYN disorders to the provision of pharmaceutical care to patients with these disorders. Emphasis is on optimization of medication-related outcomes in patients with OB-GYN disorders through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

284. Professional Experience in a Skilled Care Nursing Facility

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Chapron*

The student will apply knowledge of pharmacotherapy of medical diseases and psychiatric disorders and communication skills to patients in a skilled care nursing facility. Emphasis is on optimization of medication-related outcomes in skilled care nursing facility patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

285. Professional Experience in Surgery

Either semester. Four credits. Prerequisite: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *McCarthy*

The student will apply knowledge of pharmacotherapy to pre-surgical, surgical, and post-surgical use of drugs. Emphasis is on the optimization of medication-related outcomes in the surgical patient, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

286. Professional Experience in General Medicine II *

Either semester. Four credits. Prerequisite: PHRM 265. May be taken concurrently with PHRM 265. *Folstad*

A continuation of PHRM 265. The student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner.

287. Professional Experience in Ambulatory Care *

Either semester. Four credits. Prerequisite: PHRM 264. May be taken concurrently with PHRM 264. *Jeffery*

A continuation of PHRM 264. The student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine outpatients. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner.

288. Professional Experience in Pharmacist-Directed Anticoagulation Service *

Either semester. Four credits. Prerequisites: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Chapron*

The student will apply knowledge of pharmacotherapy of acute and chronic thrombotic disorders to the provision of pharmaceutical care to patients requiring anticoagulation therapy. Emphasis is on the optimization of medication-related outcome in anticoagulated patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

289. Professional Experience in Gastroenterology *

Either semester. Four credits. Prerequisites: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Chapron*

The student will apply knowledge of pharmacotherapy of acute and chronic gastroenterologic disorders to the provision of pharmaceutical care to patients requiring such therapy. Emphasis is on the optimization of medication-related outcome in gastroenterologic patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

290. Professional Experience in Hospice Care *

Either semester. Four credits. Prerequisites: PHRM 210, PHRM 211, PHRM 212, PHRM 256. *Pham*

The student will apply knowledge of pharmacotherapy of the final stage of terminal disorders to the provision of pharmaceutical care to hospice patients requiring palliative therapy. Emphasis is on the optimization of medication-related outcome in hospice patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and family education.

291. Professional Experience in Sub-acute Care and Chronic Disease and Rehabilitate Medicine *

Either semester. Four credits. Prerequisites: PHRM 210, 211, 212, 256. *Chapron*

The student will apply knowledge of pharmacotherapy of chronic and subacute disorders to the provision of pharmaceutical care to patients undergoing physical rehabilitation. Emphasis is on the optimization of medication-related outcome in rehabilitation patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

298. Special Topics in Clinical Rotations

Either semester. Credits by arrangement. This course may be repeated for credit.

299. Undergraduate Experiential Research Rotations

Second semester. Credits by arrangement. Recommended preparation: Cumulative GPA of 2.8 or higher.

Elective Courses Pharmacy (PHAR): See course descriptions in PHAR section: 201, 297W, 298, 299

Philosophy (PHIL)

Head of Department: Professor Crawford L. Elder
Department Office: Room 101, Manchester Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

101. Problems of Philosophy

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

Topics may include skepticism, proofs of God, knowledge of the external world, induction, free-will, the problem of evil, miracles, liberty and equality.

102. Philosophy and Logic

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

Techniques for evaluating inductive and deductive arguments; applications to specific arguments about philosophical topics, for example the mind-body problem or free will vs. determinism.

102C. Philosophy and Logic

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

Discussion of selections from such philosophers as Plato, Aristotle, Descartes, and Hume.

104. Philosophy and Social Ethics

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

Topics may include the nature of the good life, the relation between social morality and individual rights, and practical moral dilemmas. At least one section each term emphasizes women-men issues: sex relations, sex roles, sex equality, abortion, the family, etc. Other sections may emphasize issues concerning Science and Technology or Political Philosophy.

105. Philosophy and Religion

Either semester. Three credits. No student may receive more than 6 credits for PHIL 101, 102, 103, 104, 105, 106.

Topics may include proofs of the existence of God, the relation of religious discourse to other types of discourse, and the nature of religious commitment.

106. Non-western and Comparative Philosophy

Either semester. Three credits. No student may receive more than 6 credits for PHIL courses 101, 102, 103, 104, 105, 106.

Classic non-Western texts on such problems as the nature of reality and of our knowledge of it, and the proper requirements of social ethics, along with comparison to classic Western approaches to the same problems.

175. Ethical Issues in Health Care

Either semester. Three credits. *Krimerman*

Theories of ethics, with specific application to ethical issues in modern health care.

185W. Philosophy and Literature

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Philosophical problems raised by, and illuminated in, major works of literature.

200. Philosophical Issues in Contemporary Life

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. May be repeated with a change in topic for a maximum of six credits.

Philosophical dimensions of problems in contemporary life. Topics vary by semester.

205. Aesthetics

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

The fundamentals of aesthetics, including an analysis of aesthetic experience and judgment, and a study of aesthetic types, such as the beautiful, tragic, comic and sublime. Recent systematic and experimental findings in relation to major theories of the aesthetic experience.

205W. Aesthetics

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

210. Metaphysics and Epistemology

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Topics may include time, personal identity, free-will, the mind-body problem, skepticism, induction, perception, *a priori* knowledge.

210W. Metaphysics and Epistemology

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

211Q. Symbolic Logic I

Either semester. Three credits. Prerequisite: At least one of LING 101, POLS 106, PHIL 101, 102, 103, 104, 105, 106; MATH 101 or passed Q readiness test or passed a Q course. Open to sophomores or higher. *Lehmann, Wheeler*

Systematic analysis of deductive validity; formal languages which mirror the logical structure of portions of English; semantic and syntactic methods of verifying relations of logical consequence for these languages.

211V. Symbolic Logic I (Q,C)

Prerequisite: At least one of LING 101, POLS 106, PHIL 101, 102, 103, 104, 105, 106. Recommended preparation: MATH 101 or equivalent. Open to sophomores or higher.

Emphasis on computer-related material.

212. Philosophy of Science

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Issues concerning the nature and foundations of scientific knowledge, including, for example, issues about scientific objectivity and progress.

212W. Philosophy of Science

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

213. Philosophy of Social Science

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Nature and extent of social phenomena; nature and consequence of group membership; methods of investigation of social phenomena; problems of interpretation. Related doctrines of classic and contemporary theorists such as Durkheim, Weber, Simmel, Wittgenstein.

214Q. Symbolic Logic II

Second semester. Three credits. Prerequisite: PHIL 211. *Lehmann*

Logical concepts developed in PHIL 211 applied to the study of philosophical issues in the foundations of mathematics.

215. Ethics

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Judgments of good and evil, right and justice, the moral 'ought' and freedom; what do such judgments mean, is there any evidence for them, and can they be true?

215W. Ethics

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

216. Environmental Ethics

Second semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. *Bontly, Lehmann*

Inquiry into obligations to, or concerning, the environment, particularly the moral standing of animals, species, ecosystems, and natural objects.

217. Social and Political Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Conceptual, ontological, and normative issues in political life and thought; political obligation; collective responsibility; justice; liberty; equality; community; the nature of rights; the nature of law; the justification of punishment; related doctrines of classic and contemporary theorists such as Plato, Rousseau, John Rawls.

217W. Social and Political Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

218. Feminist Theory

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106 or WS 103, 104, or 124. *Meyers*

Philosophical issues in feminist theory. Topics may include the nature of gender difference, the injustice of male domination and its relation to other forms of domination, the social and political theory of women's equality in the home, in the workplace, and in politics.

221. Ancient Philosophy

(Also offered as CAMS 257.) Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle.

221W. Ancient Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

222. Seventeenth and Eighteenth-Century Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher. *Troyer*

Central philosophical issues as discussed by philosophers such as Descartes, Locke, Berkeley, Hume and Kant.

222W. Seventeenth and Eighteenth-Century Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

224. Nineteenth-Century Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Readings from philosophers such as Kant, Hegel, Marx and Engels, Bentham, Mill Schopenhauer, Nietzsche, and Kierkegaard; topics such as the debate between individualism and collectivism in the nineteenth century.

224W. Nineteenth-Century Philosophy

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

225W. Analysis and Ordinary Language

Either semester. Three credits. Prerequisite: At least one of PHIL 210, 221, 222, 227; ENGL 105 or 110 or 111 or 250.

The reaction, after Russell, against formal theories and the belief in an ideal language, and the turn to familiar common-sense "cases" and everyday language in judging philosophical claims. Russell, Moore, Wittgenstein, Ryle and Strawson.

226. Philosophy of Law

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106, which may be taken concurrently.

The nature of law; law's relation to morality; law's relation to social facts; the obligation to obey the law; interpreting texts; spheres of law; international law; the justification of state punishment; the good of law; related doctrines of contemporary theorists such as Herbert Hart and Ronald Dworkin.

228. American Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106.

Doctrines advanced by recent American philosophers.

230. Contemporary Marxism and Its Foundation

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106, which may be taken concurrently.

Marx's criticisms of capitalism; the distinctive functional explanations Marx offered for the relations of production and the superstructure; application of such explanations to aspects of American culture.

230W. Contemporary Marxism and Its Foundation

Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106, which may be taken concurrently; ENGL 105 or 110 or 111 or 250.

231. Philosophy of Religion

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. Open to sophomores or higher.

Various religious absolutes, their meaning and validity, existentialism and religion, the post-modern religious quest.

234. Phenomenology

Second semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. *Elder*

Husserl's theory of meaning; its promise of silencing skepticism and setting philosophy on a new footing; the challenge to it posed by applying it to talk about other minds.

241. Language: Meaning and Truth

Either semester. Three credits. Prerequisite: PHIL 102 or 211, and at least one of PHIL 210, 221, 222, 227.

An analysis of the concepts used in thinking about language.

243W. Philosophy of History

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106; ENGL 105 or 110 or 111 or 250.

Philosophical problems concerning the nature of historical explanation, the foundations of historical knowledge, and the nature of historical change.

245. Philosophy and Economics

(Also offered as ECON 206.) Either semester. Three credits. Prerequisite: ECON 102, 112, or 113.

An examination of the normative assumptions and implications of modern economics (for example, the connections between Classical Utilitarianism and Welfare Economics). Attention to methodological controversies in contemporary economic theory.

250. Philosophy of Mind

Either semester. Three credits. Prerequisite: At least one 200-level, three-credit philosophy course.

Contemporary issues in the philosophy of mind. Topics may include the nature of the mental; the relation of the mental to the physical; specific phenomena such as emotions, beliefs, or sensations, and relevant scientific developments.

261. Medieval Philosophy

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106.

Readings from the principal philosophers between the fourth and fourteenth centuries.

263. Oriental Philosophy and Religion

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106. *Luyster*

The historical, religious, and philosophical development of Hinduism, Buddhism, Tantrism, and Taoism.

264. Classical Chinese Philosophy and Culture

Either semester. Three credits. Prerequisite: At least one of PHIL 101, 102, 103, 104, 105, 106.

Classical Chinese philosophy, including such works as The Analects of Confucius and the works of Chuang Tzu, and their influence on Chinese culture.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement up to a maximum of six credits. Consent of Department Head required, preferably prior to the student's departure.

Special topics taken in a foreign study program.

296W. Senior Thesis in Philosophy

Either semester. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250. Open only with consent of instructor and Department Head. Independent study authorization form required. Prerequisite: Twelve credits in Philosophy at the 200's level or above, three of which may be taken concurrently.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Advanced and individual work. Open only with consent of instructor. May be repeated for credit with a change in topic.

Physical Therapy (PT)

Head of Department: Professor Scott M. Hasson
Department Office: Room 101, Koons Hall

For major requirements, see the School of Allied Health section of this *Catalog*.

210. Fundamentals of Assessment

Either semester. Five credits. Hours by arrangement. Clinical field experiences will be required. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisite: PT 213, 215, 217 and 220.

This course provides a foundation for the physical therapy assessment process, introducing the student to more general observational and interview skills to gather, document and analyze evaluation data. Students build skill in specific evaluation procedures which are fundamental to the practice of physical therapy. Students explore the scientific evidence which supports or questions the measuring characteristics of selected evaluation procedures. Students begin to use information from assessments in decisions for diagnosis, program planning and referrals.

212. Fundamentals of Treatment: Acute Care

Either semester. Six credits. Hours by arrangement. Clinical Field experiences will be required. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisite: PT 213, 215, 217, 210 and 240.

An exploration of the practice of physical therapists in the acute care setting. Students will develop competency in clinical assessment of functional limitations, identification of appropriate treatment options and implementation of interventions to improve performance of functional activities for patients commonly encountered in acute care practice settings.

213. Human Anatomy

Summer. Three credits. Three hours of lecture. Prerequisite: To enroll in the course the student must have earned a "C" or better in PNB 265. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Discussion of the conceptual and structured bases of osteology, myology, neurology, human development and basic kinesiology and biomechanics. Selected anatomical and physiological dysfunctions will also be analyzed.

215. Human Anatomy Laboratory

Summer. Three credits. Laboratory and discussion. Prerequisite: To enroll in the course the student must have earned a "C" or better in PNB 265. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Laboratory and discussion utilizing bones, models, audiovisuals and prosected human specimens to provide in-depth study of the skeletal, articular, muscular, cardiovascular, respiratory and nervous systems of the entire human body.

217. Human Physiology

Summer. Three credits. Prerequisite: To enroll in the course the student must have earned a "C" or better in PT 213 and 215. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Discussion of the biochemical, nutritional, cellular and physiological principles necessary for the analysis of the normal and abnormal function and for the rehabilitation of the human musculoskeletal, cardiovascular and respiratory systems. The effects of

exercise and of selected pathologies upon these systems will also be analyzed.

220. Tissue Dysfunction

Summer. Hours by arrangement. Prerequisite: To enroll in the course the student must have earned a "C" or better in PT 213 and 215. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

After a general introduction to cellular mechanisms by which an organism becomes dysfunctional, pathological conditions common to the musculoskeletal, gastrointestinal, genitourinary, endocrine, integumentary, central and peripheral nervous and cardiopulmonary systems are overviewed. Focus is on knowledge of pathology and disease management as a basis for program planning in physical therapy. Discussion groups may be scheduled.

221. Pharmacology for Physical Therapy

Either semester. Two credits. Hours by arrangement. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisites: PT 217 and PT 220.

The body's response to single and multiple medications, radiation and chemical treatments are considered as they relate to safe, comprehensive and effective outcomes of physical therapy care.

222. Musculoskeletal Dysfunction

Either semester. Four credits. Hours by arrangement. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisites: PT 210, PT 240; and PT 221 which may be taken concurrently.

Pathology related to the musculoskeletal system is overviewed. Focus is on knowledge of pathology and disease management as a basis for assessment, diagnosis, program planning, treatment and referrals in physical therapy. Interaction with physicians and other health professionals gives students an understanding of the role physical therapy plays in a complex multiprofessional health care system.

224. Neuromuscular Dysfunction

Either semester. Three credits. Hours by arrangement. Open only to Pre-Physical Therapy and Physical Therapy majors; others with consent of Physical Therapy Program Director. Prerequisites: PT 210, PT 221 and PT 260.

Focus is on pathology related especially to the neuromuscular systems. Knowledge of pathology and disease management is presented for assessment, diagnosis, program planning, treatment and referrals in physical therapy. Interaction with physicians and other health professionals as well as consumers gives the students the basis for understanding the role physical therapy plays in a complex multiprofessional health care system.

226. Field Work in Socialization and Leisure Time Activity with Persons with Disabilities

Either semester. Two credits. Hours by arrangement. Field work and independent study. Open only to Physical Therapy majors and sophomore Pre-Allied Health majors in the College of Liberal Arts & Sciences; others with consent of instructor.

Students will have the opportunity to meet and work with persons with disabilities outside of the regular clinical setting through participation in residential weekends at an outdoor recreational center. In addition to studying the common physical barriers, students will examine the common psychological and social difficulties encountered in an attempt to reach an optimal level of productivity in society. Students are required to provide their own transportation.

227. Field Work in Normal Motor Development

Either semester. Three credits. Hours by arrangement. Open only to Physical Therapy majors and sophomore Pre-Allied Health majors in the College of Liberal Arts & Sciences; others with consent of instructor.

This course provides an opportunity for observation of normal motor skill development through participation in the educational programming, daily care, and social and emotional support offered to infants, toddlers, and preschool age children. Students are required to spend six hours per week participating in programming and care of the children. Field work and independent study are used to develop expertise in a selected area of motor development and students are required to present in-service training in their chosen area.

240. Clinical Kinesiology

Either semester. Three credits. Hours by arrangement. Prerequisite: PHYS 122; PT 213 and 215 which may be taken concurrently. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Students will analyze the impact of force systems on the human body during functional motion, thus preparing the student to apply knowledge of normal anatomical structure and function to therapeutic intervention.

260. Functional Neurology and Movement

Either semester. Four credits. Hours by arrangement. Prerequisite: PT 213 and 215. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

The goal of this course is to provide the students with basic information on the central nervous system structure and function in order that they may better understand normal movement, the movement of patients with neurological disorders and the neurological basis behind treatment procedures. Emphasis will be placed on the analysis of segmental motion as seen in the acquisition of posture, postural reactions and adult movement patterns.

280W. Research for Physical Therapists

Summer. Three credits. Hours by arrangement. Prerequisite: ENGL 105 or 110 or 111 or 250 and a course in statistics. Open only to students in the Pre-Physical Therapy majors; others by consent of instructor.

Preparation of physical therapists to be consumers and initiators of research in clinical settings. Topics include accessing and critiquing information, formulating research questions and hypotheses, designing research projects, conducting research ethically, analyzing data, and disseminating research. Students write a research proposal relevant to physical therapy practice

298. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. (Investigation of special topics is available to qualified students.) May be repeated for credit. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

Investigation of special topics related to, but not ordinarily covered in the undergraduate offerings. These courses will be announced in advance for each semester.

299. Independent Study for Undergraduates

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit. Open only to Pre-Physical Therapy majors; others with consent of Physical Therapy Program Director.

The course is designed primarily for students who wish to extend their knowledge in some specialized subject in the field of physical therapy.

Physics (PHYS)

Head of Department: Professor William C. Stwalley
Department Office: Room 101, Physics Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

101Q. Elements of Physics

Either semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 101 or the equivalent. Not open for credit to students who have passed PHYS 121, 131, 141 or 151.

Basic concepts and applications of physics for the non-science major. Scientific principles and quantitative relationships involving mechanics, energy, heat and temperature, waves, electricity and magnetism, and the theory of the atom are covered. A laboratory provides hands-on experience with the principles of physics.

103Q. Physics of the Environment

Either semester. Three credits. Recommended preparation: MATH 101 or the equivalent. Not applicable to any requirement that specifies a course in "general physics."

Concepts of physics applied to current problems of the physical environment: energy, transportation, pollution. No previous knowledge of physics is assumed.

104Q. Physics of the Environment with Laboratory

Either semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 101 or the equivalent. No previous knowledge of physics is assumed. Not open for credit to students who have passed PHYS 103Q.

Concepts of physics applied to the physical environment, particularly to current problems related to energy, transportation, and pollution. These relationships will be further explored in the laboratory section.

105. Inquiry-Based Physics

Second semester. Four credits. One class period and three 2-hour laboratory periods. *Best*

Selected topics from physics, with an emphasis on a depth of understanding. Provides background for teaching physical science as a process of inquiry, and develops scientific literacy. Particularly for pre-service elementary school teachers.

107Q. Physics of Music

First semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 101 or the equivalent. PHYS 101Q and 107Q may not both be combined to satisfy the Group 8 requirement.

Basic principles of physics and scientific reasoning will be taught in the context of the production and perception of music, emphasizing the historic and scientific interplay between physics and music. Basic quantitative laboratories pertaining to sound, music, and waves. No previous knowledge of physics or music is assumed.

121Q-122Q. General Physics

Either semester. Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 112 or 109 or 118 or passing score on the calculus readiness test or equivalent. PHYS 121 not open for credit to students who have passed PHYS 131, 141 or 151. PHYS 122 not open for credit to students who have passed PHYS 132, 142 or 152. PHYS 121 required for PHYS 122.

Basic facts and principles of physics. The laboratory offers fundamental training in precise

measurements.

123Q. General Physics Problems

Either semester. Three credits. Prerequisite: PHYS 122 and MATH 114 or 116, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 141 or 151.

Problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 122 and who desire to have a calculus-based physics sequence equivalent to PHYS 131-132.

125Q. General Physics Problems for Engineers

Either semester. Four credits. Three class periods and one 1-hour recitation period. Prerequisite: PHYS 122 and MATH 114 or 116, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 123, 141 or 151.

Problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 122 and who desire to have a calculus-based physics sequence equivalent to PHYS 141-142 or 151-152.

131Q-132Q. General Physics with Calculus

Either semester. Four credits each semester. Three class periods and one 3-hour laboratory period. Recommended preparation for PHYS 131: MATH 113 or 115. Prerequisite for PHYS 132: PHYS 131. Recommended preparation for PHYS 132: MATH 114 or 116. PHYS 131 is not open for credit to students who have passed PHYS 141 or 151. PHYS 132 not open for credit to students who have passed PHYS 142 or 152. PHYS 131 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credits for PHYS 121. PHYS 132 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 122.

Quantitative study of the basic facts and principles of physics. The laboratory offers fundamental training in physical measurements. This course is recommended for students planning to apply for admission to medical, dental or veterinary schools. It is also recommended for science majors for whom a one year introductory physics course is adequate.

140Q. Introduction to Modern Physics

First semester. Four credits. Three class periods, one recitation period, and one 3-hour laboratory period. Recommended preparation: MATH 101 or the equivalent and MATH 109, which may be taken concurrently, or passed the Calculus Readiness Test.

Quantitative exploration of the structure of matter, including gas laws, electric and magnetic forces, the electron, x-rays, waves and light, relativity, radioactivity, and spectra. This course is recommended for prospective Physics majors.

141Q. Fundamentals of Physics I

Second semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: MATH 113 or 115 or 120, any of which may be taken concurrently. MATH 120 is preferred for Physics majors. Not open for credit to students who have passed PHYS 131 or 151. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 121.

Fundamental principles of mechanics, statistical physics, and thermal physics. Basic concepts of calculus are used. This course is recommended for prospective Physics majors.

142Q. Fundamentals of Physics II

First semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: PHYS 141, and MATH 114 or 116 or 121, any of which may be taken concurrently. MATH 121 is preferred for Physics majors. Not open for credit to students who have passed PHYS 132 or 152. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 122.

Fundamental principles of electromagnetism, optics and wave propagation. Basic concepts of calculus are used. This course is recommended for prospective Physics majors.

151Q. Physics for Engineers I

Either semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: PHYS 101 or secondary school physics; and CE 211 or 213, as well as either MATH 210 or 220, which may be taken concurrently. Not open for credit to students who have passed PHYS 131 or 141. PHYS 151 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 121.

Basic facts and principles of physics. Elementary concepts of calculus are used. Classical dynamics, rigid-body motion, harmonic motion, wave motion, acoustics, relativistic dynamics, thermodynamics.

152Q. Physics for Engineers II

Either semester. Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: PHYS 151. Not open for credit to students who have passed PHYS 132 or 142. PHYS 152 may be taken for not more than 2 credits, with the permission of the instructor, by students who have received credit for PHYS 122.

Electric and magnetic fields, electromagnetic waves, quantum effects, introduction to atomic physics.

155Q. Introductory Astronomy

Either semester. Four credits. Three class periods and one 2-hour laboratory period. Recommended preparation: MATH 101 or equivalent.

A basic introductory astronomy course including principles of celestial coordinate systems and telescope design; applications of fundamental physical laws to the sun, planets, stars and galaxies; evolution of stars, galaxies and the universe; recent space probe results, modern cosmology, astrophysics. Basic quantitative laboratory techniques relevant to astronomy.

191. Directed Study in General Physics

Either or both semesters. One credit. One class period. To be taken concurrently with any of the following: PHYS 121, 122, 131, 132, 141, 142, 151, or 152. Open only with consent of instructor. With a change in content this course may be repeated for credit.

A special study course for students who desire extra work and credit in certain 100-level physics courses.

209Q. Intermediate Physics I

First semester. Three credits. Prerequisite: PHYS 132 or 142 or 152 or, with consent of instructor, PHYS 122.

Classical mechanics, electricity, and magnetism.

210Q. Intermediate Physics II

Second semester. Three credits. Prerequisite: PHYS 132 or 142 or 152 or, with consent of instructor, PHYS 122.

Kinetic theory, introduction to quantum mechanics.

220V. Computational Physics

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: PHYS 123 or 125 or 132 or 142 or 152 and MATH 211, any of which may be taken concur-

rently; or instructor consent. Open to sophomores or higher.

A basic introduction to numerical and mathematical methods required for the solution of physics problems using currently available scientific software for computation and graphics.

230Q. The Development of Quantum Physics

Second semester. Three credits. Prerequisite: PHYS 132 or 142 or 152, which may be taken concurrently; or PHYS 122 with consent of instructor. Open to sophomores or higher.

The inadequacies of classical physical concepts in the submicroscopic domain. The revision of physical principles that led to special relativity and modern quantum theory. Application to topics chosen from atomic and molecular physics, solid state physics, nuclear physics and elementary particle physics.

242Q. Mechanics I

First semester. Three credits. Prerequisite: PHYS 142; or, with consent of instructor, PHYS 123 or 125 or 132 or 152 or 209; MATH 210 or 220, which may be taken concurrently. Open to sophomores or higher.

Newton's Laws of motion applied to mass points, systems of particles, and rigid bodies.

246Q. Mechanics II

Second semester. Three credits. Prerequisite: MATH 211 or 221 and PHYS 242 or CE 212. Open to sophomores or higher.

Further applications of Newton's Laws; continuous media; Lagrange's and Hamilton's formulation of dynamics.

255Q. Electricity and Magnetism I

First semester. Three credits. Prerequisite: PHYS 142; or, with consent of instructor, PHYS 123 or 125 or 132 or 152 or 210; MATH 210 and 211, or 220 and 221.

Properties of electric and magnetic fields; direct and alternating current circuits.

256Q. Electronics

Second semester. Three credits. Two class periods and one 3-hour laboratory period. Recommended preparation: MATH 101 or the equivalent as well as PHYS 132 or 142 or 152.

The principles of devices and their applications to instrumentation in science and engineering. Rectification, filtering, regulation, input and output impedance, basic transistor circuits, operational amplifiers, preamplifiers for photodiodes and other transducers, logic gates, and digital circuits.

257Q. Electricity and Magnetism II

Second semester. Three credits. Prerequisite: PHYS 255.

Mathematical theory of the electromagnetic field; electric and magnetic properties of matter.

258Z-259Z. Laboratory in Electricity, Magnetism, and Mechanics (Q, W, C)

Both semesters. Three credits each semester. One class period, one 3-hour laboratory period, and additional assignments on the theoretical interpretation of experiments. One hour lecture per week. Time by arrangement. A written presentation of methods and results is required for each experiment. Prerequisite: First semester, PHYS 121 or 131 or 141 or 151; Second semester, PHYS 122 or 132 or 142 or 152. Both semesters, Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

Experiments with mechanical phenomena. Experiments with electric and magnetic phenomena, including their interaction with matter. The handling of experimental data. The use of computers in experimental physics.

261Q-262Q. Introductory Quantum Mechanics

Both semesters. Three credits each semester. Prerequisite: PHYS 230; MATH 210 and 211, or 220 and 221.

Elementary principles of quantum mechanics; applications to electrons, atoms, molecules, nuclei, elementary particles, and solids.

271Q. Statistical and Thermal Physics

First semester. Three credits. Prerequisite: PHYS 123 or 125 or 132 or 142 or 152; MATH 210 and 211, or 220 and 221.

The laws of thermodynamics and their microscopic statistical basis; entropy, temperature, Boltzmann factor, chemical potential, Gibbs factor, and the distribution functions.

273Q. Introduction to Solid State Physics

First semester. Three credits. Prerequisite: PHYS 123 or 125 or 132 or 142 or 152.

Crystal lattices, lattice waves, thermal and electronic properties, imperfections in solids.

274Q. Nuclei and Particles

Second semester. Three credits. Prerequisite: PHYS 261 or equivalent.

Properties of nuclei and particles, conserved quantities, isospin, quark model, Fermi gas model, electroweak interaction, high energy scattering.

275Q. Principles of Lasers

Second semester. Three credits. Prerequisite: PHYS 257 and 261 or instructor consent. Recommended preparation: PHYS 281.

The physics of lasers, including optical pumping and stimulated emission, laser rate equations, optical resonators, Gaussian beam propagation, Q-switching, mode-locking and nonlinear optics. Applications to gas, solid-state and tunable laser systems.

276Q. Astrophysics and Modern Cosmology

Second semester. Three credits. Prerequisite: PHYS 209 or 242, 210 or 255, and 230, or instructor consent. *Mallett*

Basic principles of contemporary astrophysics; applications to stars, galaxies, and modern cosmology.

281Q. Optics

First semester. Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: PHYS 255; Math 101 or equivalent.

An introduction to geometrical and physical optics. Thick lenses, stops, aberrations, interference, diffraction, polarization.

285Z. Experimental Physics Design Laboratory (Q, W, C)

Either semester. Three credits. Two 3-hour laboratory periods and additional reading assignments. A written description of the proposed method must be submitted and approved before each experiment, and a subsequent written critical evaluation of each experiment is required. Prerequisite: PHYS 230, 242 or 246, and 257; PHYS 261, which may be taken concurrently; and PHYS 258 or 259 or ECE 262 or MMAT 236; ENGL 105 or 110 or 111 or 250.

Experiments in modern and classical physics are independently designed, performed, and evaluated. Experiments are chosen from the areas of atomic, solid state and thermal physics, as well as from acoustics and optics. Computers are utilized for control of the experimental process, data acquisition and analysis.

291. Seminar in Current Topics

Either or both semesters. One credit. One class period. To be taken concurrently with any of the following: PHYS 242, 246, 255, 257, 261, 262, 271 or 281. Open only with consent of instructor. With a change in content this course may be repeated for credit only once.

Lectures on topics relevant to current research.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits by arrangement, not to exceed 3 each semester. Open only with consent of instructor. With a change of topic, this course may be repeated for credit.

Physiology and Neurobiology (PNB)

Head of Department: Professor Angel de Blas

Department Office: Room 104, Physiology and Neurobiology Building (Horsebarn Hill #4 Annex)

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

225. Biological Rhythms

Second semester. Three credits. Prerequisite: One 200-level course in PNB or instructor consent. *Goldman*

Neuroendocrine and environmental factors in the control of biological rhythmicity, especially circadian and annual rhythms. Emphasis on animals.

230. Hormones and Behavior

First semester. Three credits. Prerequisite: One 200-level course in PNB or instructor consent. *Goldman*

Hormones and regulation of behaviors: reproductive, parental, social, and aggressive behaviors, as well as migration, hibernation, learning and memory.

230W. Hormones and Behavior

Four credits. Prerequisite: One 200-level course in PNB or instructor consent; ENGL 105 or 110 or 111 or 250.

235. Fish Physiology and Endocrinology

Second semester. Three credits. Prerequisite: One 200-level course in PNB or instructor consent. *Chapple, Chen, Crivello, Renfro*

Mechanisms and regulation of basic physiological processes in fish. Mainly teleost fishes of commercial value; also invertebrate physiological processes important to aquaculture.

250. Animal Physiology

First semester. Three credits. Prerequisite: BIOL 107 and either 108 or 110. Open to sophomores or higher. *Crivello, Renfro*

Physiological mechanisms and regulation in vertebrate animals.

250W. Animal Physiology

Prerequisite: BIOL 107 and either 108 or 110 or instructor consent; ENGL 105 or 110 or 111 or 250.

251. Biology of the Brain

Second semester. Three credits. Two class periods. Prerequisite: One 200-level course in PNB or instructor consent. *LoTurco*

Brain functions, from molecular and cellular to overall central nervous system organization. Topics of current scientific interest.

252. Physiological Model Systems

Second semester, alternate years. Three credits. Prerequisite: PNB 250, 274/275, or instructor consent. Recommended preparation: undergraduate class in basic comparative animal physiology.

Advanced, in-depth examination of animal comparative physiology.

260. Microtechnique

First semester. Four credits. One class period and two 3-hour laboratory periods. Offered in alternate years. Open only with consent of instructor.

Preparation of cells and tissues for microscopic examination, using histological stains, immunohistochemistry, and photomicrography.

262. Mammalian Endocrinology

Second semester. Two credits. Two class periods. Prerequisite: One 200-level course in PNB or instructor consent. *Gallo*

Functions of hormones in mammalian physiology emphasizing humans.

263W. Investigations in Neurobiology

First semester. Three credits. One 1-hour discussion, one 4-hour laboratory period. Prerequisite: PNB 250 or PNB 274-275; ENGL 105 or 110 or 111 or 250. *Moiseff*

Experimental investigations in neurobiology. Emphasis on designing and carrying out independent research projects, and on communicating the results.

264.-265. Human Physiology and Anatomy

Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: CHEM 122Q or 127Q. Recommended preparation: BIOL 107, PHYS 101 or 122. Open to sophomores or higher. Not open to students who have passed PNB 274-275. These courses must be taken in sequence to obtain credit, and may not be counted toward the Biological Sciences or Physiology and Neurobiology majors. *Chapple, Kimball, Moiseff, Nishiyama, Rubio*

Fundamentals of human anatomy and physiology for students in medical technology, physical therapy, nursing, and education (Sport Science).

274.-275. Enhanced Human Physiology and Anatomy

Both semesters. Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: BIOL 107, CHEM 127Q. Recommended preparation: PHYS 121, 131, or 141. Not open to students who have passed PNB 264-265. Must be taken in sequence to obtain credit. Open to sophomores or higher. *Chapple, Kimball, Moiseff, Nishiyama, Rubio*

Fundamentals of human physiology and anatomy enhanced through inquiry-based laboratories.

280. Molecular Neuroanatomy

First semester. Three credits. Prerequisite: PNB 251 or instructor consent. Recommended preparation: MCB 203 or 204.

Introduction to molecular neurobiology and the anatomy of the brain, and integration of the molecular systems with anatomical structure and function.

292W. Senior Research Thesis in Physiology and Neurobiology

Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of PNB 299, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. Open only with consent of instructor and departmental honors committee. Not limited to honors students. Special research or independent investigation for advanced undergraduates. Involves research and writing a thesis.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

297. Undergraduate Seminar

Either or both semesters. Credits and hours by arrangement. May be repeated for credit with a change in topic.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor and the department honors committee. May be repeated for credit with change in topic.

Designed for the advanced undergraduate student who desires to pursue a special problem as an introduction to independent investigation.

Plant Science (PLSC)

Head of Department: Professor Mary E. Musgrave
Department Office: Room 119, W.B. Young Building

For major requirements, see the College of Agriculture and Natural Resources section of this *Catalog*.

Agronomy**124. Turfgrass Management**

First semester. Three credits. Two class periods and one 2-hour laboratory. Not open to students who have passed PLSC 289. *Guillard*

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, weeds and diseases, morphology and identification, establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields, and other turf areas.

150. Agricultural Technology and Society

Second semester, alternate years (odd). Three credits.

Development of agricultural systems and technologies and their influence on societies. Topics include plant and animal domestication, food and industrial crops and centers of production, environmental issues, and agricultural ethics.

205. Soil Morphology, Genesis, and Taxonomy

First semester, alternate years (even). Four credits. Two class periods, one 4-hour field laboratory session. Prerequisite: PLSC 250, GEOL 102 or GEOL 101. Not open for credit to students that have passed PLSC 207 and 208. Students that have passed either PLSC 207 or PLSC 208, but not both, will be allowed to take an appropriately modified version of the course for two credits.

Students will be expected to master the nomenclature and techniques required to describe and characterize soils as natural bodies occurring on geomorphic surfaces. Theories of soil genesis and major systems of soil taxonomy will be rigorously examined, both in theory and in practice. Field trips are required.

219. Principles of Turfgrass Irrigation Systems

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 019. Not open to graduate students. *Rackliffe*

Turfgrass irrigation systems, principles of hydraulics, irrigation components, design, installation and repair. Students will design irrigation systems for various turf areas. Field trips and fieldwork will be required.

220. Professional Development for Turfgrass Industries

Second semester. Two credits. Two hour class periods. Taught jointly with SAPL 020. Not open for credit to graduate students. *Rackliffe*

Topics include human resource information, communication skills, turfgrass pesticide laws and compliance, labor laws and compliance, bid specifications, resume writing, interviewing, golf course management structures, business ethics, and benefits of professional association membership. Guest lecturers include industry professionals and representatives.

223. Turfgrass Pests and Control

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 023. Not open to graduate students. *Rackliffe*

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

224. Turfgrass Physiology and Ecology

Second semester. Three credits. Three class periods. Prerequisite: PLSC 124 or 289. *Guillard*

Turfgrass physiology related to growth and development. Response to temperature, light, water, traffic, and wind. Turfgrass community dynamics, competition, and environmental effects of turfgrass culture.

224W. Turfgrass Physiology and Ecology

Prerequisite: PLSC 124 or 289; ENGL 105 or 110 or 111 or 250.

250. Soils

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: CHEM 122, 127 or 129. Open to sophomores or higher. *Luce*

Introduction to the physical, chemical and biological properties of soils: the relationship between soils and the growth of higher plants.

253. Soils, Environmental Quality, and Land Use

Second semester, alternate years (even). Three credits. Three class periods plus required field trips. Prerequisite: PLSC 250. Not open for credit to students that have passed PLSC 209.

Principles and procedures for using soils information in solving environmental and land use problems. The functions of soils in natural ecosystems and in the hydrologic cycle will be included.

253W. Soils, Environmental Quality, and Land Use

Prerequisite: PLSC 250; ENGL 105 or 110 or 111 or 250. Not open for credit to students that have passed PLSC 209.

254. Forage Crops

First semester, alternate years (even). Three credits. Two class periods and one 2-hour laboratory period.

Production, utilization, and storage of species used as forages and their relationship to the ruminant animal.

257. Ecology and Control of Weeds

First semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: A course in plant physiology.

Weed origin and classification. Losses caused by weeds. Weed competition. Weed seed production, dormancy and germination. Cultural, mechanical, biological and chemical control methods. Weed identification.

258. Soil Fertility

First semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: PLSC 250. Offered in odd-numbered years. *Schulthess*

Factors governing nutrient uptake by plants, fate of nutrients applied to soils, principles and practices

in the manufacture and use of fertilizers for crop production, laboratory and greenhouse studies of soil and plant response to applied nutrients.

259C. Soil Chemistry

(Also offered as ENVE 259C.) First semester, alternate years, even. Three credits. Two class periods and one 2-hour laboratory period. Prerequisites: CHEM 128 and 141. PLSC 250 is recommended. *Schulthess*

Basic concepts of the physical chemistry of soil constituents. Topics include soil solution, soil atmosphere, soil organic matter, soil mineralogy, mineral surface characteristics and chemical weathering process.

283. Golf Course Management

Second semester. Three credits. Taught jointly with SAPL 083. Not open for credit to graduate students. *Rackliffe*

Cultural management techniques including soil aeration, topdressing, mowing, thatch removal, grass or species selection, fertilization, irrigation and management of personnel, pests, equipment and inventory. Field trips required.

284. Golf Course Design

First semester. Two credits. Taught jointly with SAPL 084. Not open for credit to graduate students. *Guillard, Miniutti*

Introduction to golf course design theory, planning, and layout. Putting green and tee construction methods. Turfgrass species and cultivar selection for the golf course. Guest presentations by designers and golf course superintendents. Field trips required.

Horticulture

101. Fundamentals of Horticulture

Second semester. Three credits. Three class periods. *Salsedo*

Science and practice of horticultural plant propagation and culture. Basic concepts of plant structure, growth and function. Integrated pest management. Impact of new technology. Horticulture and the environment.

203. Plant Diseases

First semester. Three credits. Two class periods and one 2-hour laboratory. Prerequisite: BIOL 108 or 110. *von Bodman*

The causes, development and management of diseases of economic plants. Lectures cover general principles and laboratories review specific examples of plant diseases of horticultural and agronomic crops.

204. Integrated Pest Management

First semester. Three credits. *Gauthier*

Principles of integrated pest management covering insect, disease, and weed problems in agronomic crops, vegetables, fruits, turfgrass, ornamentals, and greenhouse production. Environmental impacts and pest control strategies will be covered.

212. Vegetable Crops and Their Environment

Second semester. Four credits. Three class periods and one 2-hour laboratory period. *Bible*

The responses of vegetable crops to mineral nutrients, soil pH, plant population, temperature, photoperiod, pest organisms and to the modification of these factors by technology. Radish, lettuce, tomato, cucumber, sweet corn, basil, cauliflower and watercress are grown by students in the laboratory.

213. Physiology of Economic Plants

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: BIOL 110 and CHEM 122 or 127. Open to sophomores or higher. *Bible*

Water uptake, water potential, transpiration, stomatal movement, ion uptake, nutrient deficiencies,

respiration, photosynthesis, phytohormones, phytochrome, circadian leaf movement, flowering, dormancy, cold injury and allelochemicals.

225. Greenhouse Technology and Operations

First semester. Four credits. Three class periods and one 2-hour laboratory period. Field trips required. *Elliott*

Introduction to greenhouse systems with emphasis on structures, environmental control, root media, irrigation and fertilization, and pest control, in relation to requirements for plant growth and crop production. Laboratories provide experience in greenhouse operations and crop production.

226. Greenhouse Crop Production I

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Field trips required. Prerequisite: PLSC 225. Taught jointly with SAPL 026. Not open for credit to graduate students. *Elliott*

Environmental and cultural requirements and scheduling of major greenhouse crops, exclusive of edible produce. Emphasis on cut flowers and flowering potted plants and bedding and garden plants produced for spring and early summer markets. Laboratories provide experience in crop production.

230. Floral Art

Second semester. Two credits. One class period and one 2-hour studio period. Taught jointly with SAPL 030. Open to sophomores or higher.

The study of flower arrangement as an art form with emphasis on historical background, artistic principles, color harmony and care of perishable media. Individual expression is encouraged in the creation of floral composition.

231. Herbaceous Ornamental Plants

Second semester. Three credits. Taught jointly with SAPL 031. Open to sophomores or higher.

Identification, nomenclature and culture of over 160 herbaceous perennials, biennials, annuals and bulbous plants. Live plants and visual presentation are used to highlight plant characteristics and morphology. Lectures include discussions of organic growing, composting, plant morphology, trough and container gardens, and underground storage structure. Field trips to retail and wholesale businesses are a part of this class.

235. Advanced Floral Design

Second semester. Two credits. Taught concurrently with SAPL 035. Not open for credit to graduate students. One class period and one 2-hour lab. Prerequisite: PLSC 230. *Pastormerlo*

In-depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials and abstract, tribute, high-style, and wedding designs. Retail price structuring, wire services, and mass-production concepts.

238. Plant Propagation

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Bridgen, Elliott*

Fundamental principles of reproducing plants by seeds, cuttings, grafting, layering, divisions, and tissue culture. Techniques of propagating plants to establish and maintain clones.

240. Nursery Management

First semester, alternate years (odd). Three credits. Two class periods and one 2-hour laboratory period. *Corbett*

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagule to sale.

240W. Nursery Management

Prerequisite: ENGL 105 or 110 or 111 or 250.

243. Plant Biotechnology

Second semester. Three credits. Prerequisites: One of PLSC 213, BIOL 110, BIOL 201, BIOL 204. *Li*

Principles of recombinant DNA and plant gene transfer technologies. Applications of plant biotechnology in agriculture, horticulture, forestry, human/animal health care, and pharmaceutical industry. Social and environmental impacts of plant biotechnology.

244. Garden Center Management

First semester. Three credits. Taught concurrently with SAPL 071. Not open for credit to graduate students. *Ashley*

Fundamentals related to horticultural specialty businesses with particular emphasis on the retail and contracting areas. Specialty and mass merchandising firms are considered and compared.

245. Landscape Plant Maintenance

Second semester. Three credits. One three-hour class period. Taught jointly with SAPL 045. Not open for credit to graduate students.

Provides practical information on the planting and maintenance of trees and shrubs in the landscape. Includes learning how to plan landscape projects, install plant material and maintain the established landscape through proper pruning, mulching, irrigation, fertilization and other horticultural practices.

246. Biotechnology - Science, Application, Impact, Perception

Second semester. Three credits. *von Bodman*

Scientific, legal, and ethical aspects of Biotechnology application in agriculture, health medicine, forensics, and the environment. Designed for students with diverse departmental affiliations.

260. Woody Landscape Plants: Deciduous

First semester. Three credits. Two class periods and one 2-hour laboratory. *Auer*

Appropriate landscape use, ornamental features and taxonomy of deciduous ornamental trees, shrubs, vines and ground covers. Laboratories present field identification features and require the examination of plants in the landscape.

261. Woody Landscape Plants: Evergreen

Second semester. Three credits. Two class periods and one 2-hour laboratory. *Auer*

Appropriate landscape use, ornamental feature and taxonomy of coniferous or broadleaf evergreen ornamental trees, shrubs, vines and ground covers. Laboratories present field identification features and require the examination of plants in the landscape.

285. Plant Gene Transfer Techniques

Second semester. Three credits. *Li*

Techniques of plant gene delivery and transgenic plant production. Verification and analysis of transgenic plants.

286. Pesticide Safety and Management

Second semester. Two credits. Taught jointly with SAPL 086. Not open to graduate students. *Gauthier*

Pesticide application equipment, pesticide safety and toxicity, equipment calibration, pesticide poisoning, first aid and crop worker protection standards. Managing pesticides to increase safety for applicators and the environment, and increasing effectiveness using principles of Integrated Pest Management.

288. Insect Pest Management

Second semester. Three credits. Two class periods and one 2-hour laboratory. *Legrand*

Biology and management of insects with an emphasis on pests of ornamental plants and turf. Identification of key pests and their damage symptoms, monitoring insect populations and management strategies and tactics.

292. Plant Micropropagation

First semester, odd-numbered years. Three credits. One class period and two 2-hour laboratory periods. Prerequisite: CHEM 122 or 127 and consent of instructor. *Bridgen*

The use of aseptic techniques for the micropropagation of plants of economic interest. Laboratory techniques covered include rapid propagation of plants *in vitro*, meristem culture for the elimination of diseases, somaclonal variation, somatic embryogenesis and media preparation.

Landscape Architecture**202. Design of Small Spaces**

Second semester. Two credits. One class period and one 2-hour studio. Prerequisites: PLSC 255 and PLSC 275. Not open to Landscape Architecture majors.

Studio-based course emphasizing the acquisition skills necessary for the landscape design for small spaces. The skills will include: visualization methods, methodology in design process, derivation of basic forms and planting design.

241C. Computer Applications in Landscape Architecture

First semester. Three credits. Prerequisites: PLSC 256 and 262. *Westa*

This course will provide basic knowledge of a wide variety of computer applications related to Landscape Architecture. A central theme of this course will be the selection and use of the appropriate applications and integrating data between applications.

247. Landscape Contracts

Second semester. Three credits. *Westa*

A study of the various contract documents, their legality, and their relationship to landscape construction and maintenance. Practice in writing contract documents, contract cost estimation and bidding procedures will be provided.

255. Landscape Design Drawing

First semester. Three credits. Three 2-hour studios. Open only with consent of instructor. Open to sophomores or higher. *Schwab*

An introductory drawing course aiming to introduce the landscape design student to the communication of ideas through sketches and presentation drawings. One-point and two-point perspective and isometric drawing techniques are taught. Various drawing media are used in a studio environment.

256. Landscape Design Communication

Second semester. Three credits. Three 2-hour studios. Open only with consent of instructor. Open to sophomores or higher. *Alexopoulos*

The presentation of landscape designs in plan form are covered through studio drawing assignments. The color rendering of plans, the making of cross-sections, elevations and models are studied in a studio environment.

262. Landscape Design Fundamentals

Second semester. Three credits. One lecture and two 2-hour studios. Prerequisite: PLSC 256 which may be taken concurrently. Open to sophomores or higher. *Miniutti*

Introduction to basic landscape design concepts, theory and the design process.

265. Intermediate Landscape Design I

First semester. Four credits. One class period and two 3-hour studios. Prerequisite: PLSC 255, 262 and 275. PLSC 275 may be taken concurrently. Field trips are required. *Miniutti*

The development of a design process utilizing small-scale design projects. A comprehensive investigation of site analysis methods is also covered.

266. Intermediate Landscape Design II

Second semester. Four credits. Three 3-hour studios. Prerequisite: PLSC 265. Field trips are required. *Schwab*

Landscape design studio. Application of the design of landscapes: planning theory, land use planning, visual assessment, urban design, transportation, public participation.

267. Advanced Landscape Design

Second semester. Four credits. Three 3-hour studios. Prerequisite: PLSC 266 and 281. Field trips are required. *Miniutti*

A comprehensive course which covers the range of projects which the design professional might encounter in practice. Students will be expected to provide recommendations for case studies varying in subject and scale, depending on the particular expertise of the instructor.

268. Planting Studies in Landscape Architecture

First semester. Three credits. Three 2-hour studios. Prerequisite: PLSC 260, 261, 266. Open to landscape architecture majors only. *Alexopoulos*

The role and use of plants in the landscape architectural design process. Technical, functional, and design aspects of plantings are included. Not open to students who have passed PLSC 278. Field trips are required.

271. Professional Practice

Second semester. Three credits. Prerequisite: PLSC 256 and PLSC 262. *Westa*

The course will cover many of the business and professional aspects of Landscape Architecture including: various modes of practice, resumes and portfolios, licensure and ethics, developing and administering contracts, and preparing for the professional registration exam.

275. Landscape Design

First semester. Two credits. Two class periods. Open only with consent of instructor. Open to sophomores or higher. *Miniutti*

An introduction to landscape architecture: landscape history, natural and human factors; planning and design for parks, housing, urban spaces, etc.

276. Community Planning and Design

First semester. Four credits. Three 3-hour studios. Prerequisite: PLSC 266. Open to landscape architecture majors only. Field trips are required. *Westa*

Studio based course which investigates current theories and design of large scaled landscapes with an emphasis on residential, commercial and industrial subdivisions as well as the redesign of town centers.

277. The Development of Landscapes

First semester. Three credits. Prerequisite: PLSC 275. *Alexopoulos*

The development of man-made landscapes through time and their influence on present styles and trends.

278. Planting Design

First semester. Four credits. Three, 3-hour studios. Prerequisite: PLSC 260, 261, and 266. *Alexopoulos*

The use of plants to strengthen design concepts and to achieve special effects.

280. Landscape Construction Materials and Methods

First semester. Three credits. Two class periods and one 2-hour studio. Prerequisite: PLSC 256. *Schwab*

Basic hard materials used in landscape construction: masonry, wood, metals, etc. Construction documents. Layout and detail drawings for landscape structures. Computer applications.

281. Landscape Site Engineering

Second semester. Three credits. One class period and two 2-hour studios. Prerequisite: PLSC 256. *Alexopoulos*

Fundamental site engineering concepts and methods are investigated. Basic grading and drainage of landform are emphasized with the aim to develop essential skills. Earthwork computation, drainage systems, sedimentation and erosion control, and roadway design are also covered.

290W. Environmental Planning and Landscape Design

Second semester. Three credits. Two class periods and one recitation period. Prerequisite: ENGL 105 or 110 or 111 or 250. *Schwab*

Theories, concepts and methods for planning and designing the land to meet societal needs and goals. Topics include landscape planning theory, land use planning, visual assessment, urban design, and other contemporary issues significantly affecting landscape development.

293. Seminar in Landscape Architecture

Either semester. One credit. Open only with consent of instructor. Course may be repeated with credit.

Presentations of topics in landscape architecture.

Plant Science Research and Seminar**287. Field Study Internship**

Either semester or summer. One to six credits. Hours by arrangement. Open to Junior - Senior students who have demonstrated outstanding academic ability and who possess excellent professional potential as identified by their advisor. Open only with consent of Head of the Department of Plant Science and the advisor. This course may be repeated provided that the sum total of credits earned does not exceed six. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Students will work with professionals in an area of research or management.

295. Seminar

Either semester. One credit. Open only with consent of instructor. Course may be repeated for credit.

Professional presentations of current topics in Plant Science.

298. Special Topics

Either semester. Credits and hours by arrangement. May be repeated for credit with a change of topic. Open only with consent of instructor.

Topics and credits to be published prior to the registration period preceding the semester offerings.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Open to qualified students with consent of instructor and Department Head. Students are expected to submit written reports. Course may be repeated for credit.

Polish (PLSH)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II**103-104. Intermediate Levels I and II**

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Political Science (POLS)

Department Head: Professor Howard Reiter
Department Office: Room 137, Monteith Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

106. Introduction to Political Theory

Either semester. Three credits.

Major themes of political theory such as justice, obligation, and equality, and their relevance to contemporary political concerns.

121. Introduction to Comparative Politics

Either semester. Three credits.

A survey of institutions, politics, and ideologies in democratic and non-democratic states.

121W. Introduction to Comparative Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

132. Introduction to International Relations

Either semester. Three credits.

The nature and problems of international politics.

132W. Introduction to International Relations

Prerequisite: ENGL 105 or 110 or 111 or 250.

143. Introduction to Nonwestern Politics

Either semester. Three credits.

A survey of institutions, ideologies, development strategies, and the political processes in nonwestern culture.

173. Introduction to American Political Processes

Either semester. Three credits.

Analysis of the organization and operation of the American political system.

173W. Introduction to American Political Processes

Prerequisite: ENGL 105 or 110 or 111 or 250.

201. Classical and Medieval Political Theory

First semester. Three credits.

An examination of Greek, Roman and early Judeo-Christian political ideas and institutions, and their relevance to the present.

202. Modern Political Theory

Second semester. Three credits.

Major political doctrines of the contemporary period, and their influence upon political movement and institutions as they are reflected in the democratic and nondemocratic forms of government.

203W. Women in Political Development

(Also offered as WS 203W.) Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Analysis of the role of women in the process of political development in Africa, Asia and Latin America. The importance of gender to the understanding of development and modernization will be explored and the ways in which change in traditional societies has affected the position of women, economically, socially and politically will be examined.

204. Women and Politics

(Also offered as WS 204.) Either semester. Three credits.

An introduction to feminist thought, the study of women as political actors, the feminist movement and several public policy issues affecting women.

204W. Women and Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

205. The Theory of Human Rights

Either semester. Three credits. *Hiskes*

Various theories of human rights, both historical and contemporary. Conceptual arguments both in favor and critical of the theory and practice of human rights will be considered, with literature taken primarily from philosophy and political theory.

206W. Western Marxist Tradition

Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Exploration of the social and political theories of Marx and Engels, and of later interpretations and modifications of their ideas.

207. American Political Thought and Ideology

Second semester. Three credits.

American political thought from the colonial to the contemporary period. Political thought discussed as the ideological expression of the larger sociopolitical situation.

208. Politics, Propaganda, and Cinema

Second semester. Three credits.

Lectures and films from several nations serve to illustrate techniques and effects of propaganda, analyzing the pervasive impact that propaganda has on our lives. The course concentrates on the World War II era.

211. Contemporary International Politics

Either semester. Three credits.

Problems in international relations with emphasis on changing characteristics of international politics.

212. Global Interdependence and the Crisis of World Order

Second semester. Three credits.

The nature and meaning of interdependence; origins and consequences of development and underdevelopment; international resource politics; future world models.

215. American Diplomacy

First semester. Three credits.

A chronological examination of the foreign relations of the United States from 1776 to the first World War.

216. International Political Economy

Either semester. Three credits.

Politics of international economic relations: trade, finance, foreign direct investment, aid.

217. Recent American Diplomacy

Second semester. Three credits.

The foreign relations of the United States from the first World War to the present.

218. Inter-American Relations

Second semester. Three credits.

Major problems in inter-American relations; the Western hemisphere in contemporary world politics.

219. The Politics of American Foreign Policy

Either semester. Three credits.

Instructions, forces and processes in the making of American foreign policy. Emphasis will be on contemporary issues.

220. Simulation and Gaming in Foreign Policy

Second semester. Three credits.

A comparative study of foreign policy making. Use of computer-assisted simulation provides realistic experience in foreign policy decision making and international negotiation.

221. National and International Security

Either semester. Three credits.

Key American national security issues as integral parts of the larger problem of global security.

222. Foreign Policies of the Russian Federation and the Former USSR

Second semester, alternate years. Three credits.

The Soviet Union's role in world affairs as background for studying the international consequences of the breakup of the USSR; the foreign policies of the former soviet republics among themselves, and of Russia and selected other republics.

223. Comparative Politics of North America.

Second semester. Three credits. Recommended preparation: POLS 121. *Vengroff*

Commonalities and differences in the political systems of the NAFTA countries, Canada, Mexico and the United States. Issues include political culture and value systems; electoral politics, approaches to federalism and regionalism; public opinion and support for NAFTA and its expansion; migration, political integration, the treatment of indigenous peoples, ethnic and gender representation; and decentralization and the role of municipal government in the provinces/states.

224. American Diplomacy in the Middle East

Either semester. Three credits.

The strategic, political, and economic interests that have shaped U.S. policy in the Middle East. U.S. responses to regional crises, peace efforts, arms transfers, covert operations and military intervention.

225. International Organizations and Law

Second semester. Three credits.

The role of general, regional and functional intergovernmental organizations and international law in modern diplomacy, with special attention to questions of war, peaceful settlement of disputes, and social and economic development.

226. International Relations of the Middle East

Either semester. Three credits.

The foreign policies and security problems of Middle Eastern States; sources of regional conflict and competition – oil, water, borders, religion, ideology, alliances, geopolitics, refugees, and superpower intervention.

227W. International Politics in East Asia

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Comparison and analysis of the foreign policies of the states of East Asia, with special emphasis on the impact of the former Soviet Union (Russia), People's Republic of China, Japan, and the United States.

228W. East Asian Governments and Politics

First semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

The processes of political modernization in Japan and other East Asian areas.

229. Chinese Government and Politics

Second semester. Three credits.

Chinese political processes, with emphasis on ideology and problems of development.

230W. Politics in Eastern Europe

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

The politics of the East European states in a comparative and analytical framework, stressing ideology, political culture, participation, and elite behavior.

231. Political Institutions and Behavior in Western Europe

Either semester. Three credits. Open to sophomores or higher.

Comparative analysis of the governments and politics of Western Europe.

231W. Political Institutions and Behavior in Western Europe

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

232. Comparative Political Economy

Either semester. Three credits.

Introduction to overlapping themes in economics and political science including the substantive and empirical relationship between these two in advanced industrial democracies.

233. Comparative Political Parties and Electoral Systems

Either semester. Three credits.

A focus on political party and electoral systems around the world, including advanced industrial nations, transitional nations, and less developed nations. Issues such as the relationship between electoral and party systems, democratic reform, voting behavior, and organization of political parties are examined.

233W. Comparative Political Parties and Electoral Systems

Prerequisite: ENGL 105 or 110 or 111 or 250.

235. Latin American Politics

First semester. Three credits.

Theories and institutions of Latin American politics, with emphasis on issues of stability and change.

236W. Political Leadership in the Third World

Second semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

The objectives and effectiveness of national leaders, with case studies from Asia, Africa, and Latin America.

237. Politics of Russia and the Former Soviet Union

First semester. Three credits.

The social and political structure of the former Soviet Union, the causes and outcome of efforts to reform it, and the development of democratic politics in Russia and other former Soviet republics.

237W. Politics of Russia and the Former Soviet Union

Prerequisite: ENGL 105 or 110 or 111 or 250.

239W. Politics in Africa

First semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

The political systems in contemporary Africa; the background of the slave trade, imperialism, colonialism, and the present concerns of nationalism, independence, economic development and military rule. Emphasis on sub-Saharan Africa.

241. American Political Parties

Either semester. Three credits. Prerequisite: POLS 173. Open to sophomores or higher.

An analysis of the aims, organization, and growth of parties in the United States.

241W. American Political Parties

Prerequisite: POLS 173; ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

242. Political Opinion and Electoral Behavior

Either semester. Three credits.

Analysis of public opinion and its potential to affect government policies. Emphasis on explaining elections and the basis for voters' decisions.

244. Politics of South Africa

First semester. Three credits.

Internal development of the South African state and the external response to apartheid policies, with special attention to both white and African politics, U.S. policy, and other selected topics.

245. Black Leadership and Civil Rights

Either semester. Three credits.

Black leadership, emphasizing the principles, goals, and strategies used by African-American men and women to secure basic citizenship rights during the civil rights era.

246. Comparative State Politics

Second semester. Three credits.

A comparison of the political parties of the 50 states. The development and the relationship of the local and state parties in the federal system.

246W. Comparative State Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

247. Black-Feminist Politics

(Also offered as WS 247.) Either semester. Three credits.

An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

248. African-American Politics

Either semester. Three credits.

Political behavior, theory, and ideology of African-Americans, with emphasis on contemporary U.S. politics.

249. Latino Political Behavior

(Also offered as PRLS 270.) Either semester. Three credits. *Pantoja*

Latino politics in the United States. Political histories of four different Latino populations: Mexican, Puerto Rican, Cuban, and Central American. Different forms of political expressions, ranging from electoral behavior to political art.

250. Law and Popular Culture

Either semester. Three credits.

Exploration of themes in the study of law and courts by contrasting scholarly work against representations of such themes in movies, television, and other media of popular culture.

251. Law and Society

(Formerly offered as POLS 254.) Either semester. Three credits. When students intend to take several courses in the Judicial Process field (250's series), it is recommended that 251 be taken first.

Leading schools of legal thought, fundamental principles and concepts of law, the basic framework of legal institutions, and judicial procedure. Particular attention is devoted to the general features of American law as it affects the citizen, and primary emphasis is placed on the function of law as a medium for attaining a balance of social interests in a politically organized society.

252. Constitutional Law

Either semester. Three credits.

The role of the Supreme court in expounding and developing the United States Constitution. Topics include judicial review, separation of powers, federalism, and due process.

253. Judiciary in the Political Process

Second semester. Three credits. Prerequisite: POLS 173.

The Supreme Court in the Political Process.

255. Politics of Crime and Justice

Either semester. Three credits.

Criminal justice in the United States, with emphasis on the links between law, politics, and administration.

256. Constitutional Rights and Liberties

Either semester. Three credits.

The role of the Supreme Court in interpreting the Bill of Rights. Topics include freedoms of speech and religion, criminal due process, and equal protection.

257. World Cultures and U.S. Law

Second semester. Three credits.

Legal, cultural and political implications for the United States of global migration and the nature of citizenship, immigration and naturalization.

258. Comparative Perspectives on Human Rights

First semester. Three credits.

Cultural difference and human rights in areas of legal equality, women's rights, political violence, criminal justice, religious pluralism, global security, and race relations.

259. Maritime Law

Either semester. Three credits. *R. Cole*

International and domestic legal concepts concerning jurisdiction in a maritime setting.

260. Public Administration

Either semester. Three credits.

The politics of public administration. Role of administrative agencies and officials in American national, state, and local governments.

261. Politics, Society, and Education Policy

Either semester. Three credits.

Analysis of interactions among educational policy, politics, and other social forces. Insights and concerns from politics and other social sciences disciplines applied to different levels and types of schooling.

263W. Urban Politics

(Also offered as URBN 263W.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Not open for credit to students who have passed URBN 263.

Political systems and problems confronting urban governments.

264. Politics of Budgeting

Either semester. Three credits.

Examination of the decision-making processes and role of the budget in public bureaucracies and policy implementation. Contemporary controversies in budgeting are used to illustrate and apply basic principles.

264W. Politics of Budgeting

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

265. Financial Management for Public and Nonprofit Organizations

Either semester. Three credits.

Management of financial resources in public service organizations. Topics include variance analysis, cost analysis, public sector and nonprofit accounting, financial statement analysis, and forecasting.

266. Capital Financing and Budgeting

Either semester. Three credits.

An examination of the municipal bond market, capital budgeting techniques, and related public policy issues.

270W. Connecticut State and Municipal Politics
First semester, alternate years. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

An examination of contemporary Connecticut politics on the state and municipal levels.

273. American Political Economy
Either semester. Three credits.

Theoretical foundations of the American political economy. Examination of selected public policy issues, including interaction between economic factors and incentives, and democratic institutions and processes.

274. State and Local Government

Either semester. Three credits. Open to sophomores or higher.

The practical working of democracy and the role of state and local governments.

275. The Presidency and Congress
First semester. Three credits.

The contemporary Presidency and its interactions with the Congress in the formation of public policy.

276. The Policy-making Process
Second semester. Three credits.

Introduction to the study of policy analysis. Consideration of description and prescriptive models of policy-making. Examination of several substantive areas of national policy in the United States.

276W. The Policy-making Process

Prerequisite: ENGL 105 or 110 or 111 or 250.

277. Social Policy

Either semester. Three credits.

Examination of the concepts and principles of public policy analysis, with applications to important social issues.

278. Science, Technology, and Public Policy

Second semester, alternate years. Three credits. *Hiskes*

An examination of how policy is made regarding scientific and technological development; focusing on agencies, citizens and current issues in the areas of science and technology.

279. South Asia in World Politics

Either semester. Three credits.

Relations among countries of South Asia and between this region and the rest of the world. Problems of development and security confronting South Asian countries.

279W. South Asia in World Politics

Prerequisite: ENGL 105 or 110 or 111 or 250.

287. Foreign Study

Either or both semesters. Credits (up to a maximum of 15) and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted before the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

288W. Senior Thesis

Either semester. Three credits. Hours by arrangement. Prerequisite: POLS 289; ENGL 105 or 110 or 111 or 250. Open only with consent of instructor and Department Head. All honors and distinction students writing an honors or distinction thesis must register for this course in their last semester.

289. Senior Seminar

First semester. Three credits. Open only with consent of instructor.

Recommended for students in the Honors Program, required of distinction students not in the Honors Program, and open to other qualified students. A weekly seminar on selected topics in political science.

291V. Quantitative Analysis in Political Science (Q,C)

Either semester. Three credits. Recommended preparation: High School Algebra II and MATH 101 or equivalent. Open to sophomores or higher.

Explanation of the quantitative methods used in political science. Application of these methods for the analysis of substantive political questions.

296. Political Issues

Either semester. Three credits. May be repeated for credit with a change in subject matter. Open to sophomores or higher.

An exploration of the fundamental nature of political conflicts on the national and international levels.

296W. Political Issues

Prerequisite: ENGL 105 or 110 or 111 or 250.

297. Supervised Field Work

Either or both semesters. Credits up to 12. Hours by arrangement. Open only with consent of the department head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. This course may be repeated for credit with a change in subject matter. Open only with consent of instructor and department head.

Portuguese (PORT)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

193. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Psychology (PSYC)

Head of Department: Professor Charles Lowe
Department Office: Room 105, Psychology Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

132. General Psychology I

Either semester. Three credits. Two class periods and one 1-hour demonstration discussion. Ordinarily this course should be taken in the fall semester.

Basic principles that underlie mental processes and behavior; research methodology, biopsychology, sensation, perception, learning, memory and language.

133. General Psychology II

Either semester. Three credits. Prerequisite: PSYC 132. Not open for credit to students who have passed PSYC 135. May not be taken concurrently with PSYC 135.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology.

135. General Psychology II (Enhanced)

Either semester. Four credits. Three lecture periods and one 1-hour discussion section. Prerequisite: PSYC 132. Not open for credit to students who have passed PSYC 133. May not be taken concurrently with PSYC 133.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology. Applications of theory, writing, and demonstrations during discussion periods.

202Q. Principles of Research in Psychology

Either semester. Four credits. Three 1-hour lectures and one 2-hour laboratory/discussion. Prerequisite: PSYC 132 and PSYC 135 or 133 and STAT 100 or 110 (or Statistics Q 100 level). Open to sophomores or higher.

Design and analysis of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

205. Introduction to Behavioral Genetics

First semester. Three credits. Prerequisite: PSYC 132 or BIOL 102, 103, 107, or 108. *Maxson*

Methods, concepts and findings of behavioral genetics in animals and humans.

205W. Introduction to Behavioral Genetics

Prerequisite: PSYC 132 or BIOL 102, 103, 107, or 108; ENGL 105 or 110 or 111 or 250.

206. Psychology of Consciousness

First semester. Three credits. Prerequisite: PSYC 132. *Chaffin*

The role of consciousness in human cognition is examined by comparing the conscious and unconscious operation of mental faculties including perception, memory, learning, and thought.

210W. Laboratory in Cognition

Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 202Q, and PSYC 220 or 256, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. *Rueckl*

Selected experiments from the following topics: memory processes, categorization, language comprehension and problem solving.

211W. Psycholinguistics Laboratory

Either semester. Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 202Q; ENGL 105 or 110 or 111 or 250. Recommended preparation: PSYC 221 or PSYC 256 or LING 202. May be taken concurrently. *Tabor*

Introduction to the experimental study of language understanding and use. Topics selected from among speech perception, word recognition, sentence processing, language production, and corpus phenomena.

215W. Laboratory in Sensation and Perception

Semester by arrangement. Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 202Q, and PSYC 254, which may be taken concurrently; ENGL 105 or 110 or 111 or 250. *Carello, Growney*

Techniques for the study of sensory capacities and perceptual processes.

220. Learning

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Open to sophomores or higher.

Learning and memory principles found in animal research and their relationship to human behavior. Human and other species' specific types of unique learning abilities.

221. The Psychology of Language

First semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. *Shankweiler*

Those aspects of language that make it a uniquely efficient vehicle for communication and thought.

232W. Laboratory in Developmental Psychology
Second semester. Four credits. Prerequisite: PSYC 236 and PSYC 202Q; ENGL 105 or 110 or 111 or 250. *Naigles*

The techniques necessary for performing psychological research on young children; advanced topics.

236. Developmental Psychology

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Open to sophomores or higher. *Gustafson, Sanders*

Social behavior, personality, perception, cognition, language, intelligence, learning, biobehavioral processes, and research methodology in developmental perspective.

238. Theories in Developmental Psychology

Either semester. Three credits. Prerequisite: PSYC 236. *Dickerson*

Historical and contemporary theories of development. Includes Piaget, Vygotsky, Freud, Erikson, social-learning theory, ethological theory, and information-processing theory.

239. Current Topics in Developmental Psychology

Either semester. Three credits. Prerequisite: PSYC 236 or instructor consent. With change of topic, may be repeated for credit.

Selected topics (e.g., infant development, peer relations, cognitive development, and developmental psychobiology) that may vary with each offering.

239W. Current Topics in Developmental Psychology

Prerequisite: PSYC 236; ENGL 105 or 110 or 111 or 250.

240. Social Psychology

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Open to sophomores or higher.

Attitudes, social cognition, social influence, interpersonal relations, group dynamics.

241. Current Topics in Social Psychology

Semester by arrangement. Three credits. Prerequisite: PSYC 240 and consent of instructor. With a change in content, this course may be repeated for credit.

Selected topics (e.g., social influence, person perception, pro-social behavior) vary with each offering.

241W. Current Topics in Social Psychology

Prerequisite: PSYC 240 and consent of instructor; ENGL 105 or 110 or 111 or 250.

242. Laboratory in Social Psychology

Semester by arrangement. Three credits. Two class periods and one 2-hour research/laboratory period. Prerequisite: PSYC 202Q or STAT 110; PSYC 240; and consent of instructor.

Methods and techniques of research in social psychology. Supervised research investigations.

242W. Laboratory in Social Psychology

Prerequisite: PSYC 202Q or STAT 110; PSYC 240; and consent of instructor; ENGL 105 or 110 or 111 or 250.

243. The Study of Personality

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Open to sophomores or higher. *Kirsch*

Theories, methods, and research in both clinical and experimental approaches to personality.

244. Laboratory in Personality

First semester. Three credits. One 2-hour laboratory period. Class experimentation and some practice in research writing. Prerequisite: PSYC 202Q or STAT 110, PSYC 243 and consent of instructor.

Experimental design and methodology in personality research, followed by a class project written individually by each student.

244W. Laboratory in Personality

Prerequisite: PSYC 202Q or STAT 110, PSYC 243 and consent of instructor; ENGL 105 or 110 or 111 or 250.

245. Abnormal Psychology

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Open to sophomores or higher.

Nature of abnormal behavior, theories and data regarding symptoms, etiology, treatment and prevention of mental disorders.

245W. Abnormal Psychology

Prerequisite: PSYC 132 and PSYC 135 or 133; ENGL 105 or 110 or 111 or 250.

246. Psychology of Women

Either semester. Three credits. Prerequisite: Three credits of 200-level psychology. *Crawford*

Gender roles, socialization, women and work, women's relationships, violence against women, and other topics. Theory and research.

246W. Psychology of Women

Prerequisite: Three credits of 200-level psychology; ENGL 105 or 110 or 111 or 250.

248. Environmental Psychology

Either semester. Three credits. Prerequisite: PSYC 240.

Reciprocal relationships between built and natural environments and human behavior.

249. Emotional/Behavioral Disorders of Childhood

Either semester. Three credits. Prerequisite: PSYC 236.

Theory, research, treatment, and prevention in developmental psychopathology from infancy through adolescence.

249W. Emotional/Behavioral Disorders of Childhood

Prerequisite: PSYC 236; ENGL 105 or 110 or 111 or 250.

250. Current Topics in Clinical Psychology

Either semester. Three credits. Prerequisite: PSYC 242 or 245 or instructor consent. May be repeated for credit with a change of topic.

251. Health Psychology

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 133 or 135.

The interface between psychology and health is examined using a biopsychosocial model. Topics include stress and coping, health promotion, adjustment to chronic illness, and the psychology of health behaviors.

253. Animal Behavior

Either semester. Three credits. Prerequisite: BIOL 100 or 102 or 107, and PSYC 132. *Maxson, Miller*

Principles of animal behavior derived from a review of descriptive and analytic studies in laboratory and field. Sometimes offered in multimedia format.

253W. Animal Behavior

Prerequisite: BIOL 100 or 102 or 107, and PSYC 132; ENGL 105 or 110 or 111 or 250.

254. Sensation and Perception

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133.

Sensory and perceptual processes in vision, hearing, touch, taste, and smell.

255. Motivation and Emotion

(Also offered as COMM 255.) Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133.

Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

256. Cognitive Psychology

Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Open to sophomores or higher. *Rickards, Rueckl*

Different views of mental representation and processes involved in memory, language comprehension, perception, attention, and problem solving. Historical development of models in cognitive psychology.

257. Physiological Psychology

Either semester. Three credits. Prerequisite: BIOL 100 or 102 or 107 or PNB 264-265, and PSYC 132. Open to sophomores or higher. *Salamone, Swallow*

Physiological processes related to motivation, emotion, sensory processes, motor skills, learning, and psychiatric conditions.

257W. Physiological Psychology

Prerequisite: BIOL 100 or 102 or 107 or PNB 264-265, and PSYC 132; ENGL 105 or 110 or 111 or 250.

259. Drugs and Behavior

Second semester. Three credits. Prerequisite: PSYC 132 or BIOL 107. Open to sophomores or higher. *Salamone, Chrobak*

An overview of drug effects on chemical transmission in the nervous system, with an emphasis on the behavioral/psychological effects of drugs.

260. Computer Modelling of Cognitive Processes

Semester by arrangement. Three credits. Prerequisite: PSYC 254 or 256. *Dickerson*

Symbolic and connectionist approaches to modeling vision, problem solving, planning, deduction, language understanding, learning, and memory.

263. Laboratory in Animal Behavior and Learning
Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 202Q, 253, and consent of instructor. *Salamone*

A laboratory course to supplement PSYC 253.

263W. Laboratory in Animal Behavior and Learning
Prerequisite: PSYC 202Q, 253, and consent of instructor; ENGL 105 or 110 or 111 or 250.

267. Laboratory in Physiological Psychology
Semester by arrangement. Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 202Q, and PSYC 257, which may be taken concurrently.

Techniques employed in experimental investigation of the anatomical and physiological bases of behavior.

267W. Laboratory in Physiological Psychology
Prerequisite: PSYC 202Q, and PSYC 257, which may be taken concurrently; ENGL 105 or 110 or 111 or 250.

268. Industrial/Organizational Psychology
Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Open to sophomores or higher. *Barnes-Farrell, Henning, Magley, Mellor*

Applications of psychology in the workplace: Measurement, personnel decisions, performance appraisal, training, motivation, worker attitudes, leadership, ergonomics and job design, workplace health and safety.

269. Introduction to Clinical Psychology
Either semester. Three credits. Prerequisite: 245 or 245W.

History of clinical psychology as a profession; graduate training and ethical responsibilities; assessment and treatment of psychological disorders; and clinical sub-specialties.

270. Black Psychology
First semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. *Williams*

Empirical and theoretical literature on psychological experiences of African Americans. Impact of race, culture, and ethnicity on psychological development.

270W. Black Psychology
Prerequisite: PSYC 132 and PSYC 135 or 133; ENGL 105 or 110 or 111 or 250.

272. Psychology of Aging
Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133.

Psychological theories and research on adult development and aging. Focus on self development from adolescence through young adulthood, midlife and later life.

278. Human Factors Design
Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133. Recommended preparation: PSYC 268. *Henning*

Human factors/ergonomics design applied to human-machine and sociotechnical systems. Independent work in conjunction with class project.

280. Current Topics in Industrial/Organizational Psychology
Either semester. Three credits. Prerequisite: PSYC 268 or 278 or instructor consent. May be repeated for credit with a change of topic.

281. Psychological Tests and Measurements
Second semester. Three credits. Prerequisite: PSYC 202Q or STAT 110.

Individual differences, measurement theory, issues of validity, reliability, and sampling. Intelligence, achievement, personnel, vocational, and personality testing.

282. Social-Organizational Psychology
Either semester. Three credits. Prerequisite: PSYC 268 or 240. *Barnes-Farrell, Magley*

Social psychological phenomena in the workplace. Social perceptions, personality, stress, work-related attitudes, motivation, team decision-making and effectiveness, leadership and influence, organizational culture.

282W. Social-Organizational Psychology
Either semester. Three credits. Prerequisite: PSYC 268 or 240; ENGL 105 or 110 or 111 or 250. *Barnes-Farrell, Magley*

290. Foreign Study
Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head or advisor may be required prior to the student's departure.

Special topics taken in a foreign study program.

291. The History and Systems of Psychology
Either semester. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133.

Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

291W. The History and Systems of Psychology
Prerequisite: PSYC 132 and PSYC 135 or 133; ENGL 105 or 110 or 111 or 250.

292. Variable Topics
Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

294. Field Experience
Either semester. Credits, not to exceed six per semester, and hours by arrangement. Prerequisite: PSYC 132 and PSYC 135 or 133. Open only with consent of instructor. With a change in content, this course may be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised field work in clinical, community, or organizational settings.

295. Seminar in Psychology
Semester by arrangement. Three credits. Prerequisite: PSYC 132 and PSYC 135 or 133 and consent of instructor. With a change in content, may be repeated for credit.

Recent developments in psychology. Topics vary with each offering.

296W. Senior Thesis in Psychology
Either semester. Three credits. Hours by arrangement. Prerequisite: Three credits of PSYC 297 or PSYC 299; ENGL 105 or 110 or 111 or 250. Open only to Honors students with consent of instructor and Department Head.

297. Undergraduate Research
Either semester. Credits, not to exceed six per semester, and hours by arrangement. Open only with consent of instructor. Recommended preparation: PSYC 202Q. With a change in content, this course may be repeated for credit.

Participant activities related to research.

298. Special Topics
Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study
Either semester. Credits and hours by arrangement. Prerequisite: PSYC 202Q. Open only with consent of instructor. With a change in content this course may be repeated for credit.

Students are expected to develop their own plan for a research project, conduct the research, and write-up this research, consulting periodically with a faculty member.

Puerto Rican & Latino Studies (PRLS)

Director, Institute for Puerto Rican & Latino Studies:
Professor Blanca Silvestrini
Office: Room 413, Beach Hall, 4th floor

210. Contemporary Issues in Latino Studies
Either semester. Three credits.

Topics in socio-demographic patterns, cultural identity claims, community organization, migration and citizenship issues of Latino groups in post-WWII United States. Emphasis on comparative analysis and on policy implications.

211. Puerto Rican/Latino Studies Research
Either semester. Three credits.

Students design, execute and write original, library or archival-based research on Latino/a experience using documents, films, literary works, surveys, photographic and newspaper materials.

212. Field Internship in Latino Studies
Either semester. One to three credits; may be repeated for up to six credits.

Work in cultural community-oriented setting(s).

220. History of Latinos/as in the United States
(Also offered as HIST 278.) Either semester. Three credits. *Silvestrini*

Settlement and growth of Hispanic-origin populations in the United States today, from Spanish and Mexican settlement of western United States to the growth of Latino communities. Student oral history project.

221. Latinos/as and Human Rights
(Also offered as HIST 284.) Either semester. Three credits. *Silvestrini*

Latino/a issues related to human, civil and cultural rights, and gender differences.

230. Latina Narrative
(Also offered as WS 258.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250 or instructor consent. *Gonzalez*

Feminist topics in contemporary Latina literature and cultural studies.

231. Fictions of Latino Masculinity
(Also offered as WS 259.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250 or instructor consent. *Gonzalez*

Topics in Latino literature and cultural studies with an emphasis on masculinity and male authors.

232. Latina/o Literature
(Also offered as ENGL 261.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250 or instructor consent. *Gonzalez*

Extensive readings in Latina/o literature from the late nineteenth century to the present.

233. Studies in Latina/o Literature

(Also offered as ENGL 262.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250 or instructor consent. May be repeated for credit with a change of topic. *Gonzalez*

Advanced study of a theme, form, author, or movement in contemporary Latina/o literature.

241. Latin American Minorities in the United States

(Also offered as ANTH 241). First semester. Three credits.

Emphasis on groups of Mexican, Puerto Rican and Cuban origin, including treatment and historical background, social stratification, informal social relations, ethnic perceptions, relations and the concept of Latino identity.

250. Latino Health and Health Care

(Also offered as HDFS 267.) Either semester. Three credits.

Overview of health and health care issues among Latinos in the United States. Particular attention is paid to cultural and social factors associated with health and well being (eg. migration, acculturation, SES).

251. Latino Sexuality and Gender

Second semester. Three credits.

Introduction to issues of gender/sexuality among United States Latinos. Attention to variations in length of United States residence (acculturation), class, race and ethnicity.

260. Media and Special Audiences

(Also offered as COMM 232.) Either semester. Three credits. Recommended preparation: COMM 100 or COMS 102. *Rios*

Media content and audience responses. Ethnic, racial, and gender issues in mainstream and ethnic media. Special audiences include Latina/os, African Americans, Asian Americans, Women, Gays, Lesbians.

264. Latinas and Media

(Also offered as WS 260 and COMM 233.) Second semester. Three credits. *Rios*

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women.

270. Latino Political Behavior

(Also offered as POLS 249.) Either semester. Three credits. *Pantoja*

Latino politics in the United States. Political histories of four different Latino populations: Mexican, Puerto Rican, Cuban, and Central American. Different forms of political expressions, ranging from electoral behavior to political art.

271. Immigration and Transborder Politics

Either semester. Three credits. *Pantoja*

U.S. immigration policy, trans-border politics, and the impact diasporas and ethnic lobbies have on U.S. foreign policy, with the emphasis on Latino diasporas.

295. Variable Topics in Puerto Rican and Latino Studies

Either semester. Three credits. With a change in topic, may be repeated for credit.

Intensive study of specialized topics not ordinarily covered in the undergraduate curriculum, taught by visiting scholars or joint appointment faculty.

298. Special Topics in Puerto Rican and Latino Studies

Either or both semesters. Three credits. With a change in topic, may be repeated for credit.

Special topics in Puerto Rican and Latino Studies.

299. Independent Study in Puerto Rican and Latino Studies

Either semester. Credits and hours by arrangement. With a change in content, this course may be repeated for credit. Consent of the instructor.

Russian (RUSS)

Head of Department: David Herzberger

Department Office: Room 228, J.H. Arjona Building

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

193. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure.

Special topics taken in a foreign study program.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Science (SCI)

110. Humans and the Changing Global Environment

Either semester. Three credits.

An introduction to the basic scientific principles that govern the interaction between human beings and their environment. Emphasis is placed on understanding the ways in which environmental processes affect humanity and the ways in which human activities affect the environment.

150. Unifying Concepts in Biology, Chemistry and Physics

First semester. Four credits. Three lecture periods and one 2-hour laboratory. Prerequisite: Must have passed Q-readiness test or MATH 101. *Knox, Markowitz, Shaw, Terry*

A laboratory course introducing unifying concepts from biology, chemistry, and physics and their application to daily life. Includes examination of the scientific process and current scientific ideas.

193. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of the program director normally before the student's departure to study abroad. How credits are used to be determined by the College Dean and/or Advisor. Special topics taken in a foreign study program.

206. Introduction to the History of Science

(Also offered as HIST 206.) First semester. Three credits. Open to sophomores or higher. This course may be used only once to meet the distribution requirement. Rise and development of scientific inquiry; case

studies designed to illustrate problems and methods in the study of the history of science.

240. The Nature of Scientific Thought

Second semester. Three credits. Open to sophomores or higher.

An inquiry into the underlying assumptions and aims of scientific knowledge. Emphasis is placed on philosophical issues generated by current theories in the physical and biological sciences.

241. Seminar in the Nature of Scientific Thought

Second semester. One credit. One class period. Prerequisite: SCI 240 must be taken concurrently. Open to sophomores or higher.

Discussions based on the content of SCI 240.

Sociology (SOCI)

Head of Department: Professor John Manning

Department Office: Room 115, Manchester Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

107. Introduction to Sociology

Either semester. Three credits.

Modern society and its social organization, institutions, communities, groups, and social roles: the socialization of individuals, family, gender, race and ethnicity, religion, social class, crime and deviance, population, cities, political economy, and social change.

107W. Introduction to Sociology

Prerequisite: ENGL 105 or 110 or 111 or 250.

115. Social Problems

Either semester. Three credits.

Major social problems, their sources in the organization of society, public policies for their alleviation, and questions of ethics and social justice: alcohol and drug abuse, physical and mental illness, sexual variances, poverty and inequality, ethnic and racial prejudice and discrimination, women and gender, the changing family, violence, crime and delinquency, the environment, urban problems, and population planning and growth.

115W. Social Problems

Prerequisite: ENGL 105 or 110 or 111 or 250.

125. Race, Class, and Gender

Either semester. Three credits.

Race, class, and gender, as they structure identities, opportunities, and social outcomes.

125W. Race, Class, and Gender

Prerequisite: ENGL 105 or 110 or 111 or 250.

205. Methods of Social Research

Either semester. Three credits. Prerequisite: SOCI 107. *Ratcliffe, Wallace, Weakliem, Wright*

Quantitative and qualitative methods used in sociological research: designs for gathering data, problems of measurement, and techniques of data analysis. Lectures and laboratory work. Majors in sociology should take this required course in their junior year.

207V. Quantitative Methods in Social Research

Either semester. Three credits. Prerequisite: SOCI 205 or instructor consent; and STAT 100 or 110. *Bernstein, Wallace, Weakliem*

Practical work in the design and execution of research, hypothesis testing, data analysis, and interpretation.

208C. Computing in the Social Sciences

Either semester. Three credits. One 2-hour lecture and one 2-hour laboratory per week. Prerequisite: Q course

and SOCI 205 or equivalent.

Introduction to applied computing skills using a statistical package.

209. Applying Sociology to Social Issues

Either semester. Three credits. Prerequisite: SOCI 107 and 205 or instructor consent. *Ratcliff*

Applying sociology and its methods to ask research questions, gather information, and evaluate social programs.

216. Criminology

Either semester. Three credits. Open to sophomores or higher.

Theories and research on crime, criminal law, and the criminal justice system.

216W. Criminology

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

217. Deviant Behavior

Either semester. Three credits. *McNeal, Sanders*

Behaviors labeled by society as deviant, such as crime, prostitution, suicide, alcoholism, drug abuse, and mental illness.

217W. Deviant Behavior

Prerequisite: ENGL 105 or 110 or 111 or 250.

218. Juvenile Delinquency

Second semester. Three credits. *Younts*

An overview of sociological theory and research on juvenile delinquency.

218W. Juvenile Delinquency

Prerequisite: ENGL 105 or 110 or 111 or 250.

219. Drugs and Society

Either semester. Three credits. *Sanders*

Drug taking as a social problem, the "war on drugs," drug education, treatment and prevention approaches, the illegal drug market.

219W. Drugs and Society

Prerequisite: ENGL 105 or 110 or 111 or 250.

221. Sociological Perspectives on Asian American Women

(Also offered as AASI 221.) Either semester. Three credits. *Purkayastha*

An overview of social structures and inter-group relations focusing on the experience of Asian American women.

221W. Sociological Perspectives on Asian American Women

(Also offered as AASI 221W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

222. Asian Indian Women: Activism and Social Change in India and the United States

(Also offered as AASI 222.) First semester. Three credits. Prerequisite: SOCI 107, 115 or 125. *Purkayastha*

How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

226. Modern Africa

Either semester. Three credits. *Gugler*

Cultural patterns, social structure, and political conflict in Sub-Saharan Africa.

226W. Modern Africa

Prerequisite: ENGL 105 or 110 or 111 or 250.

227. Revolutionary Social Movements Around the World

Either semester. Three credits. One 3-hour class per week. Open to sophomores or higher. *DeFronzo*

Lectures and documentary films on the Russian, Chinese, Vietnamese, Cuban and Nicaraguan revolutions and movements in South Africa and the Middle East.

227W. Revolutionary Social Movements Around the World

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

230. Society and the Individual

Either semester. Three credits. Prerequisite: SOCI 107. *Dashefsky, Eisenhandler, Wright*

Modern social systems and the behavior, psychological organization, and development of individuals.

230W. Society and the Individual

Prerequisite: SOCI 107; ENGL 105 or 110 or 111 or 250.

235. African Americans and Social Protest

Either semester. Three credits. *Cazenave*

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present.

236. White Racism

Either semester. Three credits. *Cazenave*

The origin, nature, and consequences of white racism as a central and enduring social principle around which the United States and other modern societies are structured and evolve.

240. Ethnicity and Race

Either semester. Three credits. *Villemez*

Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language.

240W. Ethnicity and Race

Prerequisite: ENGL 105 or 110 or 111 or 250.

241. Women and Health

(Also offered as WS 241.) Either semester. Three credits. *Ratcliff*

Social factors shaping women's health, health care, and their roles as health-care providers.

242. American Jewry

(Also offered as JUDS 242.) Either semester. Three credits. *Dashefsky*

Historical, demographic, organizational, and sociopsychological perspectives.

242W. American Jewry

Prerequisite: ENGL 105 or 110 or 111 or 250.

243. Prejudice and Discrimination

Either semester. Three credits. *Dashefsky, McNeal, Taylor*

Sources and consequences of racial and ethnic prejudice and discrimination.

243W. Prejudice and Discrimination

Prerequisite: ENGL 105 or 110 or 111 or 250.

244. Sociology of Mental Illness

Either semester. Three credits. *Broadhead*

Madness in human societies; its history, incipience, epidemiology, etiology, institutionalization, and other issues.

244W. Sociology of Mental Illness

Prerequisite: ENGL 105 or 110 or 111 or 250.

245. Sociology of Sexualities

Either semester. Three credits. Open to sophomores or higher. Not open for credit to students who have taken SOCI 246 or 246W. *Bernstein*

Explores the social organization, construction, and politics of sexualities; particular focus on lesbian, gay, bisexual, transgender, and queer experiences and the intersection of sexualities, gender, race, and class.

245W. Sociology of Sexualities

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

247. Sociology of Health

Either semester. Three credits. *Ratcliff*

Social factors related to health, illness, and health-care systems.

247W. Sociology of Health

Prerequisite: ENGL 105 or 110 or 111 or 250.

248. Aging in American Society

(Also offered as HDFS 248.) Either semester. Three credits. This course may be used only once to meet the distribution requirements. *Eisenhandler*

Social gerontology: the role and status of older people in a changing society.

248W. Aging in American Society

(Also offered as HDFS 248W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

249. Sociological Perspectives on Poverty

Either semester. Three credits. *Cazenave, Villemez*

Poverty in the U.S. and abroad, its roots, and strategies to deal with it.

249W. Sociological Perspectives on Poverty

Prerequisite: ENGL 105 or 110 or 111 or 250.

250. Sociology of the Family

Either semester. Three credits. Open to sophomores or higher.

The American family, its changing forms and values, and the social conditions influencing it: mate selection, marital adjustment, the responsibilities and opportunities of parenthood, and resolving family crises.

250W. Sociology of the Family

Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

252. Sociology of Gender

Either semester. Three credits. *Naples*

Explores processes contributing to social construction of gender; examines the theories used to explain the system of inequality in the United States with particular attention to the intersection of gender, race, ethnicity, sexuality, and class; and evaluates how men and women are differentially constituted in the family, in education, work, politics, and language.

252W. Sociology of Gender

Prerequisite: ENGL 105 or 110 or 111 or 250.

253. Sociology of Religion

Either semester. Three credits. *Eisenhandler*

Religion in social context: differences of church, denomination, sect, and cult; religious culture, organization, and ideology.

253W. Sociology of Religion

Prerequisite: ENGL 105 or 110 or 111 or 250.

255. Population

Either semester. Three credits.

Size, growth, composition and distribution of population; social factors in population change.

255W. Population

Prerequisite: ENGL 105 or 110 or 111 or 250.

258. The Developing World

Either semester. Three credits.

Social and economic conditions in Asia, Africa, and Latin America and attempts to improve them.

258W. The Developing World

Prerequisite: ENGL 105 or 110 or 111 or 250.

259. Energy, Environment, and Society

Either semester. Three credits.

Sociological perspectives on energy production, distribution and consumption, environmental, and social organization.

259W. Energy, Environment, and Society

Prerequisite: ENGL 105 or 110 or 111 or 250.

260. Social OrganizationEither semester. Three credits. Prerequisite: SOCI 107. *Villemez, Wallace, Weakliem*

Social organization and structure in modern society. Sociology majors should take this required course in their junior year.

260W. Social Organization

Prerequisite: SOCI 107; ENGL 105 or 110 or 111 or 250.

265. Complex OrganizationsEither semester. Three credits. *Villemez, Wallace*

Theories and research on complex organizations in society; relationship between organizations and their environments; varieties of organizational forms, structures, and processes.

265W. Complex Organizations

Prerequisite: ENGL 105 or 110 or 111 or 250.

266. Topics in the Sociology of Culture

Either semester. Three credits. May be repeated for credit with a change in topic.

A variable topics course focusing on issues in the sociology of culture. Specific topics may include: production of culture and the culture industry, popular culture, the sociology of the arts, cultural representation of deviance and social problems, women and culture, film and the developing world, material culture, and cultural constructions of social inequality.

267. Public Opinion and Mass CommunicationEither semester. Three credits. *Tuchman*

Contemporary public opinion and ideology, the process and effects of mass communication, and the measurement of public opinion.

267W. Public Opinion and Mass Communication

Prerequisite: ENGL 105 or 110 or 111 or 250.

268. Class, Power, and InequalityEither semester. Three credits. *Bernstein, Glasberg, Villemez, Wallace*

Inequality and its consequences in contemporary societies.

268W. Class, Power, and Inequality

Prerequisite: ENGL 105 or 110 or 111 or 250.

269. Political SociologyEither semester. Three credits. *Glasberg*

Social analysis of power, democracy and voting, society and the state, and political economy.

269W. Political Sociology

Prerequisite: ENGL 105 or 110 or 111 or 250.

270. Social TheoryEither semester. Three credits. Prerequisite: SOCI 107. *Tuchman*

Sociological theory for advanced undergraduates.

270W. Social Theory

Prerequisite: SOCI 107; ENGL 105 or 110 or 111 or 250.

274. Work and OccupationsEither semester. Three credits. *Villemez, Wallace*

Occupations, jobs, careers, and the professions, and their effects on the division of labor, on the workplace, and on individuals in the labor force.

280. Urban Sociology(Also offered as URBN 280.) Either semester. Three credits. Open to sophomores or higher. *Abrahamson*

Social and physical organization of cities and suburbs.

280W. Urban Sociology

(Also offered as URBN 280W.) Open to sophomores or higher. Prerequisite: ENGL 105 or 110 or 111 or 250.

281. Urban Problems

(Also offered as URBN 281.) Either semester. Three credits.

Social problems of American cities and suburbs, with emphasis on policy issues.

281W. Urban Problems

(Also offered as URBN 281W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

282. Urbanization

Either semester. Three credits.

The rapid urbanization of the world's population: its causes, characteristics and consequences.

282W. Urbanization

Prerequisite: ENGL 105 or 110 or 111 or 250.

283. City Life

Either semester. Three credits.

Ways of life in large cities and suburbs and the culture of modernism.

283W. City Life

Prerequisite: ENGL 105 or 110 or 111 or 250.

284. Communities284. Communities
Either semester. Three credits. Three class periods. Prerequisite: One introductory level sociology course or instructor consent. *Eisenhandler*

Sociological analysis of processes and structures of various kinds of communities.

285. Social Welfare and Social Work

Either semester. Three credits. Open to seniors in the social sciences; to others only with consent of instructor.

Social welfare needs and programs; introduction to social work as a professional service.

288. Sociology of EducationEither semester. Three credits. *McNeal*

Education and society: primary schools through universities as agencies for social selection and socialization.

288W. Sociology of Education

Prerequisite: ENGL 105 or 110 or 111 or 250.

290. Social Movements and Social ChangeEither semester. Three credits. *Bernstein*

Revolutionary, reform, reactionary, religious, communal, and escapist movements.

290W. Social Movements and Social Change

Prerequisite: ENGL 105 or 110 or 111 or 250.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement up to a maximum of six credits. Consent of Department Head required, preferably prior to the student's departure.

Special topics in a foreign-study program.

294W. Senior Thesis in Sociology

Either semester. Three credits. Prerequisite: Fifteen credits in sociology and consent of instructor and Department Head; ENGL 105 or 110 or 111 or 250.

296. Field ExperienceEither semester. Variable (1-9) credits, by arrangement. Class and field work by arrangement with instructor and field agency. May be repeated for credit, not to exceed 9 credits total for 296 and 296W. Prerequisite: SOCI 107. *Ratcliff, Wright*

Internship in a social-welfare agency or institution.

296W. Field Experience

Prerequisite SOCI 107; ENGL 105 or 110 or 111 or 250. Three credits may be taken for W credit.

297. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. A lecture course. Topics vary by semester.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated.

Spanish (SPAN)

Head of Department: David Herzberger*Department Office:* Room 228, J.H. Arjona BuildingConsult the Modern and Classical Languages Departmental listing in this *Catalog* for requirements for Majors in Spanish.

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

181-182. Elementary Spanish I and II

Both semesters. Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Spanish in high school. Students who wish to continue in Spanish but feel ill prepared should contact the head of the Modern and Classical Languages Department.

Development of ability to communicate in Spanish, orally and in writing, to satisfy basic survival needs within a cultural setting.

183-184. Intermediate Spanish I and II

Both semesters. Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: SPAN 182 or two years of Spanish in high school.

Further development of understanding, speaking, reading, and writing skills within a cultural setting. Readings to enhance cultural awareness of the Spanish-speaking world.

185-186. Spanish for Reading Knowledge

Both semesters. Three credits each semester. Open only to seniors and graduate students. Not open for credit to undergraduates who have had SPAN 181-182. May not be used to meet the undergraduate foreign language requirement or as a prerequisite for other Spanish courses.

Basic Spanish grammar and intensive practice in reading expository prose in a variety of subjects, for use as a research tool and in preparation for the Ph.D. reading examination.

187. Major Works of Hispanic Literature in Translation

Either semester. Three credits. Knowledge of Spanish is not required.

A study of major works selected from the best of Spanish and Spanish-American literature.

190. Language, Culture, and Health in Spanish-Speaking Societies

Four credits. Semester and hours by arrangement. Prerequisite: Two years of high school Spanish or equivalent and consent of instructor. Open to graduate and undergraduate students in the health professions as well as practicing health professionals. May be repeated once for credit with a change in topic. May not be used to meet the undergraduate foreign language requirement.

Content-based language instruction with a focus on the cultural construct and context of "health" in Spanish-speaking environments. Development of Spanish language skills through intensive work with authentic materials drawn from technical literature, fiction, print media, video, radio, and other sources.

193. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally before the student's departure.

Special topics taken in a foreign study program.

200. Spanish Civilization to the Modern Period

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

An interdisciplinary course analyzing the politics, social structures, and cultural life of Spain from its beginnings to the start of the nineteenth century.

201. Ibero-American Civilization and Culture

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

History of the major social, intellectual, and artistic trends of Spanish-speaking America.

202. Studies in Spanish-American Literature

Either semester. Three credits. Recommended preparation: SPAN 201.

Readings and discussions of specific aspects of Spanish-American literature. May be repeated for credit once with a change of topic. Consult department for particulars each year.

204. Language and Culture of U.S. Hispanics

Either semester. Three credits. Prerequisite: SPAN 184.

Comparison of linguistic, historical and cultural backgrounds of various Hispanic groups in the U.S. through fiction, non-fiction, films, music, and guest speakers.

205. Contemporary Spanish America

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

An interdisciplinary course concerned with present-day cultural, social, and political structures of Spanish America. Revolutionary and counter-revolutionary ideas in contemporary society and the struggle for social, political and economic stability.

206. Contemporary Spain

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

An interdisciplinary course analyzing the politics, social structures and cultural life in Spain today, Spain in relation to Western Europe and the community of nations.

207. Women's Studies in Spanish

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

Women in Spanish and Ibero-American literature. Women's writings. The development of Spanish and Ibero-American feminism. Contemporary issues concerning women in the Spanish-speaking world.

208. Issues in Hispanic Thought

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent. With a change in topic, may be repeated for credit.

Selection for study of a major world issue debated in the Iberian Peninsula or in Ibero-America by great thinkers. A history of the issue, taking into account international cultural contexts.

209. Latin American Film

Either semester. Three credits. One 3-hour class period. Recommended preparation: SPAN 278 or instructor consent.

Offers insights into Latin American cinema and video production. Provides tools for analyzing film and its expression of socio-political and aesthetic debates in the continent.

210. Spanish for Social Workers

Either semester. Two credits. Two class periods. Open only to graduate students in the School of Social Work. Offered at the Hartford Campus.

Development of conversational skills within the cultural perspective of Hispanics in the U.S. Emphasis on intake interviewing techniques using vocabulary and structures relevant to human services contexts.

214. Topics in Hispanic Cultures

Either semester. Three credits. Recommended preparation: five semesters of college Spanish. May be repeated for credit with a change in topic.

Selected topics. Cross-disciplinary approach to the study of Peninsular and Hispanic American cultures: the colonial heritage in Latin America; intellectual traditions and national identities; cultural production under military regimes; and experience of exiles; among possible topics.

219. Spanish Film

Either semester. Three credits. One 3-hour class period. Recommended preparation: SPAN 278 or instructor consent.

Class explores the way film has expressed debates over Spanish identity and history, including the role of film under Franco, in the new democratic Spain, and as part of a postmodern Europe.

220. Introduction to Literary Study

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

Introduction to literary analysis through a variety of critical approaches: readings in poetry, drama, and prose fiction with explanation of terms useful to the study of literature.

223. Old Spanish Language and Literature

Either semester. Three credits. Prerequisite: SPAN 281.

Linguistic and literary analysis of Medieval and Renaissance Spanish texts.

224. Studies in Spanish Golden Age Literature

Either semester. Three credits. Recommended preparation: SPAN 200. May be repeated for credit once with a change in topic. Consult department for particulars each year.

Readings and discussions of specific aspects of Golden Age literature.

225. Studies in Spanish Literature of the Eighteenth and Nineteenth Centuries

Either semester. Three credits. Recommended preparation: SPAN 200. May be repeated for credit once with a change in topic. Consult department for particulars each year.

Readings and discussions of specific aspects of the literature of the period.

226. Studies in Spanish Literature of the Twentieth Century

Either semester. Three credits. Recommended preparation: SPAN 200. May be repeated for credit once with a change in topic. Consult department for particulars each year.

Readings and discussions of specific aspects of the literature of the period.

250. Film in Spain and Latin America

Either semester. Three credits.

Film language and genre in Spanish and Latin American cinema. Taught in English.

254. Special Topics in Latin American National Cinemas

Either semester. Three credits. May be repeated for credit with a change of topic. *Loss, Schiwy*

Selected Latin American national cinema. Focus on identity, aesthetics, and history.

270. Business Spanish

Either semester. Three credits. Prerequisite: SPAN 184 or instructor consent.

Introduction to commercial terminology in Spanish. Designed to meet the needs of students desiring to use Spanish as a tool for industry or commerce.

278. Intermediate Spanish Composition

Either semester. Three credits. Prerequisite: SPAN 184 or three or more years of Spanish in high school.

This course provides a thorough review of grammar and methodical practice in composition leading to command of practical idioms and vocabulary.

279. Spanish Conversation: Cultural Topics

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

In-depth development of speaking skills through cultural readings, group discussions and oral presentations on selected topics concerning the Spanish-speaking world.

280. Composition and Reading for Speakers of Spanish

Either semester. Three credits. Prerequisite: Consent of instructor.

Grammar, written composition, and readings for speakers of Spanish with little or no formal training. Emphasis is on Puerto Rican literature.

281. Great Works of Spanish Literature from its Origins to the Golden Age

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

The study of selected poems, plays, fables and novels reflecting the development of Spanish society from feudalism to world empire.

282. Literature of Crisis in Modern Spain

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

The study of selected poems, plays, short fiction, and novels reflecting the clash between tradition and progress in nineteenth- and twentieth-century Spain.

289. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

290. Spanish Phonetics

Either semester. Three credits. Recommended preparation: SPAN 278.

A study of the sounds of the language and drills to improve pronunciation. Recommended for all majors and for those who expect to teach Spanish.

291. Advanced Spanish Composition

Either semester. Three credits. Recommended preparation: SPAN 278.

Treatment of the finer points of Spanish grammar. Exercises in translation and free composition. Stylistic analysis of texts chosen from Spanish authors, newspapers and magazines.

292. Selected Topics in Hispanic Literature

Either semester. Three credits. May be repeated for credit once with a change of topic. Consult department for particulars each year.

293. Foreign Study

Either or both semesters. Credits and hours by arrangement. May be repeated for credit. Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

294. Literature of Puerto Rico and the Spanish Caribbean

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

Readings and discussions of major authors and works of the Spanish Caribbean with special emphasis on Puerto Rico.

295. Spanish-American Literature: The formative Years

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

The emergence of the New World in the chronicles of the conquest and colonization of Spanish America. Selected texts from "barroco de Indias" (Sor Juana Inés de la Cruz), and from the period of political independence. The coming of age of Spanish-American literature with the pioneer texts of José Martí and the first "Modernismo."

296. Great Works of Modern Spanish-American Literature

Either semester. Three credits. Recommended preparation: SPAN 278 or instructor consent.

Study of the most significant texts of "Modernismo" with focus on Rubén Darío. The "avant-garde" in Spanish America. The narrative of the "boom" and its impact on present-day literature.

297. Spanish-American Fiction

Either semester. Three credits. Recommended preparation: SPAN 201.

Lectures, readings and reports on the development of the Spanish-American novel and short story.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Open only with consent of instructor. With a change in content, may be repeated for credit.

Study Abroad in Spain. The University of Connecticut sponsors an academic program at the University of Granada, Spain, which is open to those who have successfully completed a fifth semester Spanish course or the equivalent. Courses include Spanish language and linguistics, literature, culture, history, economics, political science and art history.

Study Abroad in Latin America. Students who have taken at least two years of college-level Spanish are eligible for University of Connecticut sponsored programs in Argentina, Chile, the Dominican Republic and Mexico. Courses are offered in liberal arts and social sciences.

Statistics (STAT)

Head of Department: Professor D. Dey

Department Office: Room 323, College of Liberal Arts and Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

Credit restrictions: 100 level statistics courses are not open for credit to students who have passed a 200 level statistics course or who are taking such a course concurrently. Students can receive no more than four credits from Statistics 100 and 110.

100V. Introduction to Statistics I (Q, C)

Either semester. Four credits. Recommended Preparation: Math 101 or the equivalent. Three class periods and one discussion period. See credit restrictions above.

A standard approach to statistical analysis

primarily for students of business and economics; elementary probability, sampling distributions, normal theory estimation and hypothesis testing, regression and correlation, exploratory data analysis. Learning to do statistical analysis on a personal computer is an integral part of the course.

110V. Elementary Concepts of Statistics (Q, C)

Either semester. Four credits. Recommended Preparation: Math 101 or the equivalent. Three class periods and one discussion period. See credit restrictions above.

Standard and nonparametric approaches to statistical analysis; exploratory data analysis, elementary probability, sampling distributions, estimation and hypothesis testing, one- and two-sample procedures, regression and correlation. Learning to do statistical analysis on a personal computer is an integral part of the course.

201Q. Introduction to Statistics II

Either semester. Three credits. Prerequisite: STAT 100 or 110. Open to sophomores or higher.

Analysis of variance, multiple regression, chi-square tests, and non-parametric procedures.

220Q-221Q. Statistical Methods (Calculus Level)

Either semester. Three credits each semester. Prerequisite: MATH 114 or 116 or 121.

Basic probability distributions, point and interval estimation, tests of hypotheses, correlation and regression, analysis of variance, experimental design, non-parametric procedures.

224Q. Probability Models for Engineers

Either semester. Three credits. Prerequisite: MATH 210Q or 220Q. Students may not receive more than three credits from STAT 224 and STAT 220 or from STAT 224 and STAT 230.

Probability set functions, random variables, expectations, moment generating functions, discrete and continuous random variables, joint and conditional distributions, multinomial distribution, bivariate normal distribution, functions of random variables, central limit theorems, computer simulation of probability models.

230Q-231Q. Introduction to Mathematical Statistics

Both semesters. Three credits each semester. Prerequisite: MATH 210 or 220. Students may not receive credit for both STAT 230 and 315, or both STAT 231 and 316.

The mathematical theory underlying statistical methods. Probability spaces, distributions in one and several dimensions, generating functions, limit theorems, sampling, parameter estimation. Neyman-Pearson theory of hypothesis testing, correlation, regression, analysis of variance.

235Q. Elementary Stochastic Processes

(Also offered as MATH 232Q.) Either semester. Three credits. Prerequisite: STAT 220 or 224 or 230 or MATH 231. Not open for credit to students who have passed MATH 232Q.

Conditional distributions, discrete and continuous time Markov chains, limit theorems for Markov chains, random walks, Poisson processes, compound and marked Poisson processes, and Brownian motion. Selected applications from actuarial science, biology, engineering, or finance.

242Q. Analysis of Experiments

Either semester. Three credits. Prerequisite: STAT 201 or 220 or instructor consent. Credit may not be received for both STAT 242 and 342.

Straight-line regression, multiple regression, regression diagnostics, transformations, dummy variables, one-way and two-way analysis of variance, analysis of covariance, stepwise regression.

243Q. Design of Experiments

Second semester. Three credits. Prerequisite: STAT 201 or 220 or instructor consent. Credit may not be received for both STAT 243 and 343.

Methods of designing experiments utilizing regression analysis and the analysis of variance.

252Q. Sampling Theory

Either semester. Three credits. Prerequisite: STAT 231 or instructor consent.

Sampling and nonsampling error, bias, sampling design, simple random sampling, sampling with unequal probabilities, stratified sampling, optimum allocation, proportional allocation, ratio estimators, regression estimators, super population approaches, inferences in finite populations.

253Q. Nonparametric Methods

First semester. Three credits. Prerequisite: STAT 231 or instructor consent.

Basic ideas, the empirical distribution function and its applications, uses of order statistics, one- two- and c-sample problems, rank correlation, efficiency.

261V. Statistical Computing

Second semester. Four credits. Prerequisite: STAT 220 or STAT 230. Recommended preparation: An applied statistics course. Open only with consent of instructor.

Introduction to computing for statistical problems; obtaining features of distributions, fitting models and implementing inference (obtaining confidence intervals and running hypothesis tests); simulation-based approaches and basic numerical methods. One hour per week devoted to computing and programming skills.

271V. Statistical Quality Control and Reliability

Either semester. Three credits. Prerequisite: STAT 231.

Development of control charts, acceptance sampling and process capability indices, reliability modeling, regression models for reliability data, and proportional hazards models for survival data.

272. Introduction to Biostatistics

Either semester. Three credits. Prerequisite: STAT 220 or instructor consent.

Rates and proportions, sensitivity, specificity, two-way tables, odds ratios, relative risk, ordered and non-ordered classifications, trends, case-control studies, elements of regression including logistic and Poisson, additivity and interaction, combination of studies and meta-analysis.

272Q. Introduction to Biostatistics

Either semester. Three credits. Prerequisite: STAT 220 or an applied statistics course along with either STAT 230 or MATH 231 or instructor consent.

280V. Applied Time Series

Either semester. Three credits. Prerequisite: STAT 231 or instructor consent.

Introduction to prediction using time-series regression methods with non-seasonal and seasonal data. Smoothing methods for forecasting. Modeling and forecasting using univariate, autoregressive, moving average models.

284Q. Probability and Statistics Problems

Either semester. One or two credits. Hours by arrangement. Prerequisite: MATH 231 and STAT 230. Not open for credit to students who have passed MATH 284Q.

Designed to help students prepare for the second actuarial examination.

286Q. Introduction to Operations Research

(Also offered as MATH 286Q and STAT 356.) Either semester. Three credits. Prerequisite: MATH 231 or STAT 220 or 230. Not open for credit to students who have passed MATH 286 or STAT 356.

Introduction to the use of mathematical and statistical techniques to solve a wide variety of organizational problems. Topics include linear programming, network analysis, queueing theory, decision analysis.

294. Field Study Internship

Either semester. Credits and hours by arrangement. Prerequisites: Completion of Freshman - Sophomore General CLAS requirements. Completion with a grade of "C" or better of STAT 220 or STAT 230 and STAT 242 or STAT 243. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised field work relevant to some area of Statistics with a regional industry, government agency, or non-profit organization. Evaluated by the field supervisor and by the instructor (based on a detailed written report submitted by the student).

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

296. Undergraduate Research

Either semester. Three credits. Hours by arrangement. Open only with consent of instructor.

Supervised research in probability or statistics. A final written report and oral presentation are required.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit.

Urban and Community Studies (URBN)

Director, Urban and Community Studies Program

(for the TriCampus): Robert Fisher

Office: Room 220, Undergraduate Building,
West Hartford

Coordinator, Urban and Community Studies Program
(for Storrs): Peter L. Halvorson

Office: Room 430, College of Liberal Arts and
Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

130. The City in the Western Tradition

(Also offered as GEOG 130.) Either semester. Three credits.

A broad discussion of the role and structure of the city in the western tradition from ancient Mesopotamia to contemporary America. Special emphasis will be placed on the mechanisms by which cities and ideas about them have been diffused from one place to another and on the changing forces that have shaped the western city.

230. Introduction to Urban Studies

Second semester. Three credits. Open to sophomores or higher.

Introduction to the analysis of urban development with particular stress on those problems pertinent to the American central city.

231. Internship in Urban Studies: Field Study

Either semester. Credits, not to exceed three, by arrangement. Hours by arrangement with hosting agency. To be elected concurrently with URBN 232. Prerequisite: Consent of instructor. Students taking this course will be assigned a final grade of S (satisfac-

tory) or U (unsatisfactory).

A fieldwork internship program under the direction and supervision of a member of the Urban Studies faculty. Students will be placed in agencies or industries where their academic training will be applied. One 8-hour work day per week (or its equivalent) for the host agency during the course of the semester will be necessary for three academic credits.

232. Internship in Urban Studies: Seminar

Either semester. Credits, not to exceed three, by arrangement. To be elected concurrently with URBN 231. Prerequisite: Consent of instructor.

Description, analysis, and evaluation of the fieldwork portion (URBN 231) of the internship. Written reports are required.

233. Urban Geography

(Formerly offered as URBN 212.) (Also offered as GEOG 233.) Either semester. Three credits.

Analysis of the growth, distribution, and functional patterns within and among Western cities. Particular attention is placed on applying urban geographical concepts to city planning problems.

241. The History of Urban America

(Also offered as HIST 241.) Second semester. Three credits.

The development of urban America with emphasis on social, political, physical, and environmental change in the industrial city.

241W. The History of Urban America

(Also offered as HIST 241W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

248. Urban Anthropology

First semester. Three credits.

A general course on urbanization, emphasizing contrasts between "developed" and "developing" countries.

259. Urban and Regional Economics

(Also offered as ECON 259.) Second semester. Three credits. Prerequisite: ECON 218 or 218Q. Recommended preparation: ECON 111, 102 or 113 and One of: MATH 106Q, 113Q, 115Q, 118Q, or 120Q.

Economic problems of cities and regions: urban markets for land, labor, and housing; location decisions of businesses and households; metropolitan transportation problems; urban/suburban fiscal relations; urban and regional environmental quality; and the economics of crime.

263W. Urban Politics

(Also offered as POLS 263W.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250.

Political systems and problems confronting urban governments.

280. Urban Sociology

(Also offered as SOCI 280.) Either semester. Three credits. Open to sophomores or higher.

Social and physical organization of cities and suburbs.

280W. Urban Sociology

(Also offered as SOCI 280W.) Prerequisite: ENGL 105 or 110 or 111 or 250. Open to sophomores or higher.

281. Urban Problems

(Also offered as SOCI 281.) Either semester. Three credits.

Social problems of American cities and suburbs with emphasis on policy issues.

281W. Urban Problems

(Also offered as SOCI 281W.) Prerequisite: ENGL 105 or 110 or 111 or 250.

295. Variable Topics

Either semester. Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either or both semesters. Credits and hours by arrangement. Prerequisite: Consent of instructor. May be repeated for credit.

Vietnamese (VIET)

Head of Department: Professor David K. Herzberger
Department Office: Room 228, J.H. Arjona Building

101-102. Elementary Levels I and II

103-104. Intermediate Levels I and II

101 and 103 are offered in the first semester, and 102 and 104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Arjona 128 or at Ed.Benson@UConn.edu for more information.

Women's Studies (WS)

Director, Women's Studies Program: Marita

McComiskey

Office: Room 426 Beach Hall

For major requirements, see the College of Liberal Arts and Sciences section of this *Catalog*.

103. Introduction to Women's Studies in the Social Sciences

First semester. Three credits.

An introduction to research on women and gender in a variety of social science fields. Considers interpersonal relationships, socioeconomic status, power and authority as women experience them and explores the myths and realities of difference between women and men, and of differences among women of different race, class or ethnic backgrounds in the U.S.

104. Feminisms and the Arts

Either semester. Three credits. *D'Alleva*

Interdisciplinary exploration of the work of women artists in drama, the visual arts, music, literature, and/or film. Key issues of feminist criticism in the arts are discussed.

105. Gender in Everyday Life

Either semester. Three credits.

Explores how the biological fact of sex is transformed into a system of gender stratification in our everyday lives. Examines the social position of women in the family, work, and politics while maintaining sensitivity to the diversity of women's experiences across class, racial-ethnic groups, cultures, and regions. Experience in introductory research methods to analyze the social construction and structural organization of gender.

124. Gender in Global Perspective

Either semester. Three credits.

Exploration of the construction and reproduction of gender inequality in global perspective. Study of the social position and relations of women and men (political, economic, cultural and familial) in selected nonwestern societies. Diversity of women's and men's experiences across class, racial-ethnic groups, sexualities, cultures, and regions.

193. Foreign Study

Either or both semesters. Credit and hours by arrangement. May be repeated for credit. Consent of program director required, normally before the student's departure.

203W. Women in Political Development

(Also offered as POLS 203W.) Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. *Creevey*

Analysis of the role of women in the process of development in Africa, Asia and Latin America. The importance of gender to the understanding of development and modernization will be explored and the ways in which change in traditional societies has affected the position of women economically, socially, and politically will be examined.

204. Women and Politics

(Also offered as POLS 204.) Either semester. Three credits.

An introduction to feminist thought, the study of women as political actors, the feminist movement and several public policy issues affecting women.

208. Gender and Sexuality in Modern Europe

(Also offered as HIST 208.) Either semester. Three credits. *Shafer*

The construction of gender difference and ideas about sexuality in western Europe since 1789. Masculinity and femininity; sexuality, identity and the state; European power and personhood in global context.

210. History of Women and Gender in Early America

(Also offered as HIST 210.) Either semester. Three credits. Not open to students who have taken HIST 202 or WS 202 before fall 1998.

Compares the evolving gender systems of native American groups, transplanted Africans, and immigrant Europeans up to the early Nineteenth Century. Topics include women's work, marriage and divorce, witch-hunting, masculinity, and women's Revolutionary War roles.

215. History of Women and Gender in the United States, 1790-Present

(Also offered as HIST 215.) Either semester. Three credits. Not open to students who have taken HIST 202 or WS 202. *Porter-Benson*

Women and gender in family, work, education, politics, and religion. Impact of age, race, ethnicity, region, class, and affectional preference on women's lives. Changing definitions of womanhood and manhood.

217. Women and Film

Either semester. Three credits.

Feminist analysis of Hollywood film. Investigates women's roles as filmmaker, writer, editor, and actress as well as messages communicated to female viewers.

231. Anthropological Perspectives on Women

(Also offered as ANTH 231.) First semester. Three credits. Open to sophomores or higher.

Major conceptual and historical problems in the anthropological study of gender. Women's roles in different historical and contemporary settings, the emergence of new concepts of family, kinship, power, and cultural ideology.

241. Women and Health

(Also offered as SOCI 241.) Either semester. Three credits. *Racliffe*

Social factors shaping women's health, health care, and their roles as health-care providers.

247. Black Feminist Politics

(Also offered as POLS 247.) Either semester. Three credits.

An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

250. Feminisms

Three credits. Prerequisite: WS 103, 104, or 124.

Current feminist theories and related social and political issues.

251. Women and Body Art

Either semesters. Three credits.

Women's use of body art to express aspects of gender identity and interpretation of body art from a variety of cultures. "Body art" encompasses cosmetics, painting, hair styling, tattoo, scarification, clothing, ornaments, plastic surgery and exercise.

252. Genders and Sexualities

First semester. Three credits.

Overview of lesbian, gay, bisexual, and transgender issues.

258. Latina Narrative

(Also offered as PRLS 230.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250 or instructor consent. *Gonzalez*

Feminist topics in contemporary Latina literature and cultural studies.

259. Fictions of Latino Masculinity

(Also offered as PRLS 231.) Either semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250 or instructor consent. *Gonzalez*

Topics in Latino literature and cultural studies with an emphasis on masculinity and male authors.

260. Latinas and Media

(Also offered as PRLS 264 and COMM 233.) Second semester. Three credits. *Rios*

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women.

261. Women's Studies Internship Program

Either semester. Three to nine credits. Hours by arrangement. Prerequisite: One Women's Studies course. To be taken concurrently with WS 262. Open only with consent of Women's Studies Internship Coordinator. Transfer students who wish to major in Women's Studies are not required to take Women's Studies Internship Program.

A field placement 9-18 hours per week in an organization related to the student's major field of study. Such work is overseen by the field work supervisor and the Women's Studies Internship Coordinator.

262. Women's Studies Internship Seminar

Either semester. Three credits. Open only with consent of Women's Studies Internship Coordinator. *McComiskey*

A weekly seminar on women and work in which students integrate their field experience with readings, class discussion and guest lecturers.

263. Women and Violence

Either semester. Three credits.

A discussion of the various forms of violence against women in our society, including rape, battering, incest and pornography; treats the social, political and personal meaning of violence.

264. Gender in the Workplace

First semester. Three credits.

An examination of the role of gender in shaping the American workplace and the lives of workers. Discussion of important issues such as comparable

worth and sexual harassment drawing on research done in a variety of social science disciplines.

265. Women's Studies Research Methodology

First semester. Three credits. Prerequisite: WS 103 or WS 104 or WS 124 or HIST 121. Women's Studies majors are strongly urged to take this course as early as possible and before PHIL 218.

Analyses gender bias in research design and practice, problems of androcentric values, and over-generalization in research. Varieties of feminist research methods and their implications for the traditional disciplines. Student projects using different methodologies.

266. Women and Ethnicity: Changing Roles in a Changing Society

Either semester. Three credits.

An examination of the intersections of gender, race and culture as these are played out in women's studies, oral histories, and other forms of testimony. Readings and discussions will explore the myths and realities of Asian-American, Latin, and African-American women's experiences using a sociohistorical perspective.

267. Women and Poverty

Second semester. Three credits.

Focus on poverty in the United States with special attention to its effects on women and their families, including emphasis on race and class differences, and on the policies that keep women in poverty and those that will bring them out of it.

268. Gender and Communication

(Also offered as COMM 245.) Either semester. Three credits. Prerequisite: COMM 100 or instructor consent. Not open for credit to students who have passed COMS 226 or WS 278.

Differences in male/female communication, and an examination of cultural assumptions regarding gender in the communication process. Critically analyze the theory, politics and practice of communication and gender.

269. The Women's Movement

Either semester. Three credits. Not open for credit to students who have passed WS 278.

What is feminism? Who are the feminists and what do they want? How effective has the Women's Movement been in accomplishing its goals? What are the most controversial questions it has raised? Is the Women's Movement dead or dying? We will research and discuss questions like these both through examination of the writings and activities of the contemporary Women's Movement in the United States and through historical and international comparisons.

270. Women and Religion

(Also offered as ANTH 274.) Either semester. Three credits. Not open for credit to students who have passed WS 278 when offered as Women and Religion. *Linnekin*

Religion has been a source of personal empowerment and social change for women throughout history. This course will examine the various roles women have assumed in religion and its effects on their position in their personal lives and in society.

271. Seminar on Rape Education and Awareness I

First semester. One credit.

This course explores issues of sexual violence and trains those enrolled to facilitate rape awareness workshops for the campus community. Students are required to attend an intensive two-day training program and participate in weekly seminars.

272. Seminar on Rape Education and Awareness II

Second semester. One credit. Prerequisite: WS 271.

This course further explores broader issues of sexual violence and continues to train those enrolled to facilitate rape awareness workshops for the campus community. Students are required to participate in weekly seminars and facilitate rape awareness workshops.

273. Women in the Bible

(Also offered as ANTH 273.) Either semester. Three credits. Prerequisite: INTD 294.

An introduction to Biblical interpretation from a feminist perspective, examining how women are represented in the Hebrew Scriptures and the New Testament. Issues of authorship, translation, point of view, cultural context and language.

289W. Senior Seminar in Women's Studies

Second semester. Three credits. Prerequisite: ENGL 105 or 110 or 111 or 250. Recommended preparation: WS 265 and PHIL 218 or instructor consent. For WS majors only. *McComiskey*

Capstone course integrating and analyzing Women's Studies theory and substance through research on a common topic and discussion of advanced texts.

290. Ethnicities, Sexualities, Modernisms

(Also offered as ARTH 290.) Either semester. Three credits.

Topics in twentieth-century visual culture (film, advertising, fine arts, crafts, literatures), with emphasis upon matters related to social constructions of ethnicity and sexuality, and upon issues raised by feminist and postcolonial theories.

293. Foreign Study

Either or both semesters. Credit and hours by arrangement. May be repeated for credit. Consent of program director required, normally before the student's departure. May count toward the major with consent of the director.

295. Variable Topics

Either semester. Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

298. Special Topics

Either semester. Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

299. Independent Study

Either semester. Credits and hours by arrangement. This course may be repeated for credit with a change in subject matter. Open only with the consent of the instructor and Women's Studies Program Director.

Ratcliffe Hicks School of Agriculture

Director: Professor Suman Singha

Office: 211, W.B. Young Building

For major requirements, see the Ratcliffe Hicks section of this *Catalog*.

Courses in the Ratcliffe Hicks School of Agriculture are *not* open to baccalaureate students.

Agricultural and Resource Economics (SARE)

050. Principles of Agricultural and Resource Economics

Either semester. Three credits. Taught concurrently with ARE 150.

An introduction to agricultural economics, the role of agriculture in today's United States economic system, and relationships that regulate the entire economic environment.

060. Agribusiness Management

Either semester. Three credits. Prerequisite: SARE 050.

Covers concepts and techniques essential in managing an agribusiness firm. Topics include: finance, production planning, marketing, and personnel management.

098. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

099. Independent Study

Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Students are advised to read the Ratcliffe Hicks School regulation limiting the number of credits which may be applied toward graduation.

An independent study project is mutually arranged between a student and an instructor.

Agriculture (SAAG)

001. Introduction to Computer Use

(Formerly offered as SAME 001.) Either semester. Three credits. Two class periods and one 2-hour laboratory period.

Use of computers for solving problems and accessing information. Includes word-processing, spreadsheets, databases and presentation software.

016. Introduction to Agricultural Mechanics

Either semester. Two credits. One class period and one 2-hour laboratory.

Small gas engines, welding and other applications of agricultural equipment in animal science and horticultural operations.

050. Freshman Seminar

First semester. One credit.

A course designed to assist incoming students in adjusting to college and improving their academic performance. Freshmen will learn about university resources and facilities, and strategies relating to study skills, problem solving, time management, and setting and achieving academic and personal goals.

090. Applied Mathematics

First semester. Three credits. Not open to students who have passed the RHA math proficiency test.

Practical applications of mathematical principles

to problems most likely to be encountered in course work and after graduation. Topics to be included are: Basic arithmetic, percentages, ratios, fraction to decimal conversions and simple algebra. The use of graphs in the metric (SI) system will be covered. This course is required for all RHA students except those who received exemption by exam.

091. Tech Prep

Either semester. Credits and hours by arrangement. Total credits not to exceed 12. Open only to students enrolled in the Agricultural Education Tech Prep program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for credit up to a total of 12 credits.

Topics and credits are established through pre-approved articulation agreements.

098. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic.

099. Independent Study

Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

An independent study project is mutually arranged between a student and an instructor.

Animal Science (SAAS)

004-005. Anatomy and Physiology of Domestic Animals

Both semesters. Three credits. Two class periods and one 2-hour laboratory period. *Dinger, Hoagland*

A study of the anatomy and physiology of the animal body including characteristics that impact animal production systems. The physiology of reproduction and digestion will receive emphasis. Management practices and techniques used to maximize production efficiency will be included.

006. Nutrition and Feeding of Livestock

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Andrew*

This course covers the basic nutrients present in feeds and their breakdown and use by animals. Methods of describing the nutritive value and properties of commonly used feedstuffs are discussed. Nutritive requirements, ration formulations, and feeding problems and practices are covered.

007. Animal Breeding and Genetics

Second semester. Three credits. Two-hour class period and 2-hour discussion and practice period.

Hoagland

The principles of genetics, chemistry of nucleic acids, replication, transcription, translation and regulation of genes, population and quantitative genetics, and modern molecular genetic approaches as tools for breeding, and improving livestock production.

020. Introduction to Animal Science

First semester. Three credits. Two class periods and one 2-hour discussion or laboratory period. Taught concurrently with ANSC 120. *Darre*

The biological, physical and social factors that influence animal production and utilization.

025. Behavior and Training of Domestic Animals

Second semester. Three credits. Two class periods and one 2-hour laboratory. Taught concurrently with ANSC 125. *Darre*

Application of behavior of cattle, horses, sheep,

goats, swine, and poultry to their management, training, and welfare. Basic principles of genetics and physiology of behavior, perception, training, learning, motivation, and stress with consideration of integrated behavioral management and animal welfare.

027. Introduction to Companion Animals

Second semester. Three credits. Taught concurrently with ANSC 127.

Basic concepts of the nutrition, physiology, health and management of companion animals.

035. Horse Production

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Dinger*

This course entails the appraisal, structure, use, and management of light horses.

036. Light Horse Training and Management

First semester. Two credits. One class period and one 3-hour laboratory period. Prerequisite: SAAS 035. *Callahan*

The course includes instruction in the breaking and training of young horses.

037. Methods of Equitation Instruction

Second semester. Two credits. One class period and one 2-hour laboratory or discussion period. Taught concurrently with ANSC 237. Consent of instructor required. *Callahan*

The techniques and procedures of teaching equitation including the theories of riding and teaching methods. Practice teaching will be required under the supervision of the instructor.

038. Management of the Horse Breeding Farm

Second semester. Three credits. One class period and two 2-hour laboratory or discussion periods. Recommended preparation: SAAS 035. *Dinger*

This course is designed to develop technical and managerial skills necessary for operating horse farms. Programs for herd health, hoof care, nutrition, breeding, foaling and record keeping will be included.

040. Animal Products

First semester. Three credits. Two class periods and one 3-hour laboratory period. *Faustman*

An introduction to meat, dairy and poultry products. Issues concerning regulatory standards, nutritive value, safety and quality assessment will be emphasized. Laboratories will emphasize the production and processing of these animal food products. Field trips may be required.

052. Introduction to Poultry Industry

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Darre*

A practical application of scientific principles in the poultry industry. It will include classification, selection methods, breeding, incubation and chick development, brooding, nutrient requirements, processing and management practices.

064. Management Skills and Practices – Beef Cattle

Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Practical experience in common management practices is offered by working in the University facilities under supervision.

065. Management Skills and Practices – Dairy Cattle

Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Kazmer*

Practical experience in common management

practices is offered by working in the University facilities under supervision.

066. Management Skills and Practices – Horses

Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Bennett*

Practical experience in common management practices is offered by working in the University facilities under supervision.

067. Management Skills and Practices – Poultry

Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Darre*

Practical experience in common management practices is offered by working in the University facilities under supervision.

068. Management Skills and Practices – Sheep

Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Hoagland*

Practical experience in common management practices is offered by working in the University facilities under supervision.

069. Management Skills and Practices – Swine

Either semester. One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Hoagland*

Practical experience in common management practices is offered by working in the University facilities under supervision.

070. Livestock Production

First semester. Four credits. Three class periods and one 2-hour laboratory period. Taught concurrently with ANSC 277S. Offered in odd-numbered years. *Hoagland*

Biological and economic aspects of beef, sheep, and swine production. Field trips required.

076. Dairy Herd Management

First semester. Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with ANSC 275. *Kazmer*

This course is concerned with the biological and economical aspects of commercial milk production, including: milking, sanitation, nutrition, record keeping, and the physiology and anatomy of milk secretion.

077. Applied Dairy Herd Management

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Kazmer*

The organization and management of dairy farms with emphasis upon business and economic decision making. Management programs in the areas of nutrition, disease control, waste management, selection, reproduction and milking will be evaluated. Field trips are required.

081. Horse Selection and Evaluation

Second semester. Two credits. One 4-hour laboratory or discussion period. Taught concurrently with ANSC 281. Consent of instructor required. *Bennett*

Comparative evaluation, classification and selection of horses according to conformation, breed characteristics and performance. Judging skills including justification of placing through presentation of oral reasons will be developed. Field trips required.

083. Livestock and Carcass Evaluation

Second semester. Two credits. Two 2-hour laboratory periods. Taught concurrently with ANSC 283.

Classification, form to function relationships,

grades and value differences of livestock are included. Objective and subjective methods of appraisal are used to evaluate beef cattle, sheep and swine.

088. Advanced Animal and Product Evaluation

First semester. One credit. Hours by arrangement. Taught concurrently with ANSC 288. May be repeated for credit once. Consent of instructor required.

Intensive training in the evaluation of selected species of farm animals or their products. Type standards and the relation of anatomical features to physiological function are emphasized. Evaluation skills including justification of decisions will be developed. Students enrolled in this course will have the option to participate on intercollegiate animal and product evaluation teams. Field trips are required, some of which may occur prior to the start of the semester.

094. Seminar

Second semester. One credit. One 2-hour discussion period. *Zinn*

A discussion of current employment opportunities in animal agriculture. In addition, students will prepare resumes and give oral presentations.

096. Professional Internship

Either semester. Credits and hours by arrangement. Open only for third semester students with consent of instructor and Department Head. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Andrew, Darre*

098. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section. Contact Department Main Office for list of current topics and instructors.

099. Independent Study

Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Students are advised to read the Ratcliffe Hicks regulation limiting the number of credits which may be applied to the minimum graduation requirements.

An independent study project is mutually arranged between student and an instructor.

Natural Resources Management and Engineering (SAME)

010. Introduction to Wildlife Management

Second semester. Three credits. Two class periods and one 2-hour laboratory period.

Basic wildlife techniques including habitat evaluation and identification signs. Emphasis will be placed on keeping a wildlife field journal. Field exercises and laboratory provide an opportunity to use and evaluate techniques for wildlife management.

098. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

099. Independent Study

Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

An independent study project is mutually arranged between a student and an instructor.

Pathobiology (SAPB)

015. Health and Disease Management of Animals

Second semester, alternate years (even). Three credits. *Bushmich, Khan*

This course will include a study of the causes of diseases, practical preventive control measures and specific mammalian and poultry diseases.

098. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

099. Independent Study

Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Students are advised to read the Ratcliffe Hicks School regulation limiting the number of credits which may be applied toward graduation.

An independent study project is mutually arranged between a student and an instructor.

Plant Science (SAPL)

003. Introduction to Plant Science

First semester. Four credits. Three class periods and one 2-hour laboratory period.

A general course designed to give students a broad view of the field of horticulture as well as a working knowledge of the fundamentals of plant growth.

017. Vegetable Production

First semester. Four credits. Three class periods and one 2-hour laboratory period. *Bible*

A general course dealing with the fundamentals of vegetable gardening and production. Lectures cover modern methods of culture and their influence on food quality. Selected vegetable crops are grown by students.

019. Principles of Turfgrass Irrigation Systems

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with PLSC 219. *Rackliffe*

Turfgrass irrigation systems, principles of hydraulics, irrigation components, design, installation and repair. Students will design irrigation systems for various turf areas. Field trips and fieldwork will be required.

020. Professional Development for Turfgrass Industries

Second semester. Two credits. Two hour class periods. Taught jointly with PLSC 220. Not open for credit to graduate students. *Rackliffe*

Topics include human resource information, communication skills, turfgrass pesticide laws and compliance, labor laws and compliance, bid specifications, resume writing, interviewing, golf course management structures, business ethics, and benefits of professional association membership. Guest lecturers include industry professionals and representatives.

022. Introduction to Soil Science

First semester. Three credits. Two class periods and one 2-hour laboratory exercise or field trip. *Schulthess*

Physical and chemical properties of soils; nature and use of fertilizer and lime materials; management of soils for crop production including soil testing, tillage and fertilization practices, and conservation practices.

023. Turfgrass Pests and Control

First semester. Three credits. Two class periods and one 2-hour laboratory. Taught jointly with PLSC 223. *Rackliffe*

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

024. Turfgrass Management

First semester. Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with PLSC 124. *Guillard*

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, weeds and diseases morphology and identification establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields and other turf areas.

025. Greenhouse Operations

First semester. Four credits. Three class periods and one 2-hour laboratory period. Field trips required. *Elliott*

Introduction to greenhouse systems with emphasis on structures, environmental control, root media, irrigation and fertilization, and pest control, in relation to requirements for plant growth and crop production. Laboratories provide experience in crop production.

026. Greenhouse Crop Production I

Second semester. Three credits. Two class periods and one 2-hour laboratory period. Field trips required. Prerequisite: SAPL 025. Taught jointly with PLSC 226. *Elliott*

Environmental and cultural requirements and scheduling of major greenhouse crops, exclusive of edible produce. Emphasis on cut flowers and flowering potted plants and bedding and garden plants produced for spring and early summer markets. Laboratories provide experience in crop production.

029. Forage Crops

First semester. Three credits. Two class periods and one 2-hour laboratory period.

A course on the principles of producing and utilizing pasture, hay and silage crops for forage. Emphasis will be placed on environmental, soil and economic factors in forage production. Details of varietal selection, seeding methods, fertilization, cutting management, pest control, and storage will be discussed for each of the major grass and legume species used in the northeast.

030. Floral Art

Either semester. Two credits. One class period and one 2-hour studio period. Taught concurrently with PLSC 230.

The study of flower arrangement as an art form with emphasis on historical background, artistic principles, color harmony, and care of perishable media. Individual expression is encouraged in the creation of floral composition.

031. Herbaceous Ornamental Plants

Second semester. Three credits. Taught jointly with PLSC 231.

Identification, nomenclature and culture of over 160 Herbaceous perennials, biennials, annuals and bulbous plants. Live plants and visual presentation are used to highlight plant characteristics and morphology. Lectures include discussions of organic growing, composting, plant morphology, trough and container gardens, and underground storage structure. Field trips to retail and wholesale businesses are a part of this class.

035. Advanced Floral Design

Second semester. Two credits. One class period and one 2-hour studio period. Prerequisite SAPL 030. Taught concurrently with PLSC 235.

In-depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials and abstract, tribute, high-style, and wedding designs. Retail price structuring, wire services, and mass-production concepts.

041. Plant Pest Control

First semester. Three credits. Two class periods and one 2-hour laboratory period.

A practical survey of practices used for insect, disease and weed pests of turf, flowers, shrubs, trees and food crops. Consideration will be given to quarantine, mechanical, biological and chemical means of control. Field trips may be required.

042. Integrated Pest Management

Second semester. Three credits. Three class periods. Prerequisite: SAPL 023 or 042. *Gauthier*

An overview of integrated pest management (IPM) techniques, from development to implementation, with horticultural crops.

045. Landscape Plant Maintenance

Second semester. Three credits. Two class periods and one 2-hour field laboratory. Field trips required. Taught jointly with PLSC 245. *Elliott*

Planting, establishment and maintenance of woody and herbaceous plants in built and managed environments. Plant structural and functional requirements. Preserving and protecting established plants. Soil conditions and modification. Influence of climate and modification of microclimate. Plant selection. Pruning, mulching, water and irrigation, nutrition and fertilization, plant health care and other horticultural practices.

046. Fruit Production

Second semester. Three credits.

A practical course in fruit production, including information for home fruit growing. Particular emphasis is directed toward the culture of apples, peaches, pears, blueberries, grapes, raspberries and strawberries.

047. Fruit Production – Laboratory

Second semester. Two credits. Two 2-hour laboratory periods. Prerequisite: SAPL 046, which may be taken concurrently.

A practical laboratory in the techniques and methods of fruit production and pruning of fruit crops. Emphasis is directed towards apples, peaches, pears, blueberries, grapes and raspberries. Field trips are required.

059. Evaluating and Staging Horticultural Materials

First semester. One credit. Hours by arrangement. Open only with consent of instructor. This course may be repeated once for credit.

Organization and staging of horticultural exhibits and contests suitable for fairs, garden clubs, and community projects.

060. Nursery Maintenance

First semester. Three credits. Two class periods and one 2-hour laboratory period. *Corbett*

A consideration of the culture, care and maintenance of shade trees and nursery stock. Laboratory periods will be devoted to planting, pruning and maintenance of shade trees and nursery material. At least one field trip will be required.

062. Plant Propagation

Second semester. Three credits. Two class periods and one 2-hour laboratory period.

The study of methods used to reproduce agricultural and horticultural crops. Discussion will emphasize sexual and asexual propagation techniques. Field trips are required.

066. Plant Materials, Evergreen Plants

Second semester. Three credits. Two class periods and one 2-hour laboratory period. *Corbett*

Trees, shrubs and vines will be studied. Lectures will be devoted to the characteristics, ornamental value and selection of evergreen plants. Laboratory periods will be devoted to identification.

067. Plant Materials, Non-Evergreen Plants

First semester. Three credits. One class period and two 2-hour laboratory periods. Prerequisite: SAPL 066. *Corbett*

Trees, shrubs and vines will be studied. Lectures will be devoted to the characteristics, ornamental value and selection of non-evergreen plants. Laboratory periods will be devoted to identification.

069. Landscape and Planting Design

Second semester. Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: SAPL 066, 067; and 031, which may be taken concurrently. *Corbett*

The principles and techniques of landscaping the home grounds to include site analysis, drawing techniques, selections of materials, and selecting plants to fit the design.

071. Horticultural Retailing

First semester. Three credits. Taught concurrently with PLSC 244. *Ashley*

A discussion of the principles of retailing as applied to the sale of horticultural crops. Emphasis is given to planning, customer preference, competition, merchandising, pricing and inventory as they apply to landscaping, flower shop and garden center management.

074. Horticulture Production Practicum – Nursery

Second semester. Credits and hours by arrangement. Prerequisite: SAPL 060. Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Corbett*

Students will be responsible for planning, producing, and marketing a nursery crop. Students may use private facilities or the Ratcliffe Hicks C.R. Burr Teaching Nursery.

075. Horticulture Production Practicum – Vegetables

Second semester. Credits and hours by arrangement. Prerequisite: SAPL 017. Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). *Ashley*

Students will be responsible for planning, producing, and marketing a vegetable crop on a commercial scale. Requires the availability of private production facilities.

083. Golf Course Management

Second semester. Three credits. Three class periods. Taught jointly with PLSC 283. *Rackliffe*

Discussion of the specialized field of golf course management. Topics: cultural techniques including soil aeration, topdressing, mowing, and thatch removal; grass or species selection, fertilization, irrigation, personnel, golf course pest management and equipment and inventory management. Field trips required.

084. Golf Course Design

First semester. Two credits. Two class periods. Taught jointly with PLSC 284. *Guillard, Miniutti*

Introduction to golf course design theory, planning, and layout. Putting green and tee construction methods. Turfgrass species and cultivar selection for the golf course. Expertise and experience of departmental faculty and staff, independent and commercial consultants and designers, and golf course superintendents will be utilized. Field trips required.

086. Pesticide Safety and Management

Second semester. Two credits. Two class periods. Taught jointly with PLSC 286. *Gauthier*

Pesticide application equipment, pesticide safety and toxicity, equipment calibration, pesticide poisoning, first aid and crop worker protection standards. Managing the use of pesticides to increase safety to applicators and the environment as well as increasing pest management effectiveness utilizing principles of IPM.

087. Internship

Either semester or summer. One to 6 credits. Hours by arrangement. Open to qualified students with consent of advisor and Department Head. This course may be repeated provided that the sum total of credits does not exceed six.

Students will work with professionals in an area of their interest. Written reports, daily logs, and/or evaluations by professional supervisors may be required.

088. Special Topics

Either semester. Credits and hours by arrangement. Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

099. Independent Study

Either or both semesters. Credits and hours by arrangement. Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

An independent study project is mutually arranged between a student and an instructor.