ECO 337 Labor Theory
Microeconomic theory is used to investigate specific topics in the field of labor economics. Areas to be covered include the household's decision-making process and the supply of labor, investments in human capital and discrimination in the marketplace, the effect of market structure on the demand for labor, and the distribution of income. 
Prerequisite: C or higher in ECO 303
3 credits

ECO 339-J China's Economy Since 1949
Economic development policies in the People’s Republic of China from the revolution in 1949 to the present. Topics include agricultural and industrial organization, population policies, sectoral balances, foreign trade, and efforts to reconcile planning with market forces.
Prerequisite: C or higher in ECO 108
Advisory Prerequisite: C or higher in ECO 305 or 303
3 credits

ECO 344 Analysis for Managerial Decision Making
Development of analytical techniques (such as linear programming and statistical decision theory) for making economic decisions, both in public and private enterprises. The student makes decisions on large-scale and detailed cases in realistic managerial situations and is introduced to the use of the computer. May not be taken for credit after BUS 249. Not for credit in addition to the discontinued BUS 349.
Prerequisite: C or higher in ECO 303
3 credits

ECO 351, 352, 353, 354 Special Topics in Economics
Semester supplements to this Bulletin contain specific descriptions when the course is offered. May be repeated for credit as the topic changes.
Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits per course

ECO 355 Game Theory
Introduction to game theory fundamentals with special emphasis on problems from economics and political science. Topics include strategic games and Nash equilibrium, games in coalitional form and the core, bargaining theory, measuring power in voting systems, problems of fair division, and optimal and stable matching. This course is offered as both AMS 355 and ECO 355.
Prerequisites: MAT 126 or 131 or 141 or AMS 151; C or higher in ECO 303
3 credits

ECO 356, 357 Special Topics in Economics
Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes.
Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits per course

ECO 358-J Topics in Developing Economies
Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes.
Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits

ECO 360 Money and Banking
An introduction to modern monetary institutions and mechanisms, their relationship to the economy, and governmental policies in this area.
Prerequisite: C or higher in ECO 108
3 credits

ECO 362 Financial Economics
An analysis of financial decision making inside the corporation, covering topics such as the choice of the dividend policy, the choice between equity and debt, and the interaction between financing and investment decisions. We will also look at how market imperfections, in particular the existence of informational differences between managers and investors, influence the performance of corporations. Finally, we study the optimal policies to cope with market imperfections. 
Prerequisites: C or higher in ECO 303 and 320
3 credits

ECO 373-H Economics of Environment and Natural Resources
Analysis of economic policies designed to deal with environmental problems. Issues involving the management of renewable and exhaustible resources such as timber and oil as well as the advantage of market-based solutions over the conventional demand approach are discussed. 
Prerequisite: C or higher in ECO 303
3 credits

ECO 383 Public Finance
Theories of taxation and the satisfaction of public wants; the nature of public goods; theory of public expenditure; effects of taxes on resource allocation and welfare; theories of tax incidence; fiscal and equity implications of alternative tax schemes; fiscal dynamics and growth; intergovernmental fiscal relations. 
Prerequisites: C or higher in ECO 303 and 305
3 credits

ECO 389 Corporate Finance
Introduction to the main concepts and problems confronted by financial managers in the corporate world. Development and application of tools and methods for financial decision-making and analysis, including discounting and present value; asset valuation; investment criteria; risk and return; risk management; cost of capital; debt and dividend policies; international financial management. 
Prerequisite: C or higher in ECO 303
Advisory Prerequisite: C or higher in ECO 305
3 credits

ECO 475, 476 Undergraduate Teaching Practica I, II
Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. In ECO 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. 
Prerequisites to ECO 475: Permission of instructor and department 
Prerequisites to ECO 476: C or higher in ECO 475; permission of instructor and department
3 credits per course, S/U grading

ECO 487 Independent Research in Economics
An independent project, developed out of advanced coursework in economics, designed in consultation with and supervised by a faculty member. The project should be formulated before the start of the semester in which the research will be done and should culminate in a substantial written paper. May be repeated. 
Prerequisites: At least one upper-division ECO course that forms the basis of research; permission of a supervising faculty member
0-6 credits

ECO 488 Internship in Economics
An independent research project undertaken in the context of a work environment that provides students with access to data, people, and experience that make possible the study of a particular economic issue. Related readings, a daily journal, and an analytical paper under the supervision of a faculty member are required. Permission must be obtained before the start of the semester in which the student enrolls in ECO 488. May be repeated up to a limit of 12 credits, but only counts as one course toward major requirements.
Prerequisites: C or higher in ECO 303 and 305; permission of supervising faculty member, Career Center Internship Manager, and sponsoring employing agency
0-6 credits, S/U grading

EGL English

EGL 191-B Introduction to Poetry
Intensive analysis of poems in English of various periods and types and varying complexity. Descriptions available from the English Department. Not for English major credit.
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 192-B Introduction to Fiction
An analysis of fictional prose in terms of each section’s specific theme. A goal of each section is to interpret various pieces of literature in relation to a political or historical view, or a particular literary technique. Descriptions available from the English Department. Not for English major credit.
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 193-B Introduction to Drama
Introduction to the analysis of drama, emphasizing the literary more than the theatrical dimension of the works, through examination of a range of plays from a variety of genres and periods. Descriptions available from the English Department. Not for English major credit.
Prerequisite: Completion of D.E.C. category A
3 credits

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EGL 204 Literary Analysis and Argumentation
An introduction to the techniques and terminology of close literary analysis and argumentation as applied to poetry, fiction, and drama. The course includes frequent demanding writing assignments and is designed for students beginning their major study in English. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 205-I Survey of British Literature I
The study of British literature from the Old English period to Milton. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 206-I Survey of British Literature II
The study of British literature from Dryden to the end of the 19th century. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 217-K American Literature I
The study of American literature from 1607 to 1865. 
Prerequisite: Completion of D.E.C. category A
Advisory Prerequisite: Completion of D.E.C. categories 1 and J
3 credits

EGL 218-K American Literature II
The study of American literature from 1865 to 1945, with attention to the antebellum historical and cultural contexts. 
Prerequisite: Completion of D.E.C. category A 
Advisory Prerequisite: Completion of D.E.C. categories 1 and J
3 credits

EGL 224-G 20th-Century Literature in English
The study of literature in English in the 20th century from Great Britain, Africa, the Caribbean, Canada, Australia, Ireland, New Zealand, and other countries and areas that produce material written in the English language. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 226-K 20th-Century American Literature
A survey of major works reflecting the regional, ethnic, and traditional interests of American writers, with emphasis on the post-1945 period. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 231-I Saints and Fools
An introduction to literature about the lives of saints and the holy fool tradition in major texts of Russian and English literature. Emphasis is placed on the ways authors have used foundational religious values of humility, the transcendent irrational, and kenosis to confront their own times. Authors considered range from monks to Dickens, Dumas, Chancer, Gogol, and Pushkin; films include Murder in the Cathedral and Forrest Gump. This course is offered as both EGL 231 and HUR 231. 
Advisory Prerequisite: Completion of D.E.C. category B
3 credits

EGL 232-I Rebels and Tyrants
An exploration of literary rebels and tyrants central to Russian and Anglo-American traditions. The subversive tactics of such writers as Shakespeare, Dostoevsky, Sir Walter Scott, Solzhenitsyn, and Salinger are appraised in the light of the dominant social, political, and aesthetic systems they confront. This course offered as both EGL 232 and HUR 232. 
Advisory Prerequisite: Completion of D.E.C. category B
3 credits

EGL 243-I Shakespeare: The Major Works
A study of major works in several genres and consideration of Shakespeare's precursors and his influence on the development of drama to the present. Designed for students who want a one-semester survey of Shakespeare. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 249-K African-American Literature and Music in the 19th and 20th Centuries
A detailed look at African-American literature and music and their importance for American literature and music of the 19th and 20th centuries. An examination of the literature with attention to the special stylistic devices, tones of literary voice, and characterization that writers use in their efforts to match the music experience with the written word. Selections from the recordings of African American and African American inspired musicians—from Bessie Smith and Louis Armstrong to Nina Henrix and the Rolling Stones. This course is offered as both AFH 249 and EGL 249. 
Advisory Prerequisite: One D.E.C. category B or D course
3 credits

EGL 260-G Mythology in Literature
The analysis of myth in literature from antiquity to the present. The course explores literary texts that use mythic material, analyzes the irrational in myth, and examines the history of motifs, figures, and themes in myths that persist in Western literature. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 261-B The Bible as Literature
A literary approach to the Bible that explores the characteristic principles of the Bible's narrative and poetic art. This course is offered as both EGL 261 and JDH 261. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 266-G The 20th-Century Novel
Major works and developments in the modern and contemporary novel. This course is offered as both CLT 266 and EGL 266. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 274-K Black American Literature
A survey of 19th- and 20th-century Black American literature. Particular attention is paid to the way in which themes of black literature reflect the historical developments of the time, especially the conditions before, during, and after the Civil War and the Civil Rights Movement. 
Prerequisite: Completion of D.E.C. category A
Advisory Prerequisite: Completion of D.E.C. categories 1 and J
3 credits

EGL 276-B Feminism: Literature and Cultural Contexts
An examination of works written by or about women reflecting conceptions of women in drama, poetry, and fiction. The course focuses on literature seen in relation to women's sociocultural and historical position. This course is offered as both EGL 276 and WST 276. 
Prerequisite: Completion of D.E.C. category A
3 credits

EGL 285 Writing Workshop: Fiction
A workshop in the development of skills in writing fiction through practice supplemented by readings. 
Prerequisites: Permission of instructor; completion of D.E.C. category A
3 credits

EGL 286 Writing Workshop: Poetry
A workshop in the development of skills in writing poetry. Poetry writing is supplemented by readings. 
Prerequisites: Permission of instructor; completion of D.E.C. category A
3 credits

EGL 300-G Old English Literature
The study of Old English language and the literature written in it from its beginnings to the 11th century. 
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 205
3 credits

EGL 302-G Medieval Literature in English
Major authors, themes, and forms of British literature from the 13th to the early 16th century, usually excluding Chaucer. 
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 205
3 credits

EGL 304-G Renaissance Literature in English
The study of English literature of the 16th century. 
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 205
3 credits

EGL 306-G English Literature of the 17th Century
The study of English literature from the late Renaissance to the age of Dryden. 
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 205
3 credits

EGL 310-G Neoclassical Literature in English
The study of English literature from about 1700 to 1790. 
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 206
3 credits

EGL 312-G Romantic Literature in English
The study of English literature from the end of the neoclassical period to the beginning of the Victorian Age, 1798-1832. 
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 206
3 credits

EGL 314-G Victorian Literature
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 206
3 credits

EGL 316-G Early American Literature
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 217
3 credits

EGL 318-G 19th-Century American Literature
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 217
3 credits

EGL 320-G, 321-G, 322-G Literature of the 20th Century
Pre- or Co-requisite: EGL 204 
Advisory Prerequisite: EGL 218
3 credits per course

EGL 333-K The Italian-American Experience in Literature
Literary and historical perspectives on the experience of Italians in America and their contribution to American culture from the earliest wave of Italian
EGL 349-G Major Writers of the Victorian Period in England
Semester Supplements to this Bulletin contain descriptions when course is offered. May be repeated for credit as the topic changes. Pre- or Corequisite: EGL 204 Advisory Prerequisite: EGL 206 3 credits

EGL 350-G Major Writers of American Literature, Colonial Period to 1900
Semester Supplements to this Bulletin contain descriptions when course is offered. May be repeated for credit as the topic changes. Pre- or Corequisite: EGL 204 Advisory Prerequisite: EGL 217 3 credits

EGL 352-G Major Writers of 20th-Century Literature in English
Semester Supplements to this Bulletin contain descriptions when course is offered. May be repeated for credit as the topic changes. Pre- or Corequisite: EGL 204 Advisory Prerequisite: EGL 204 3 credits

EGL 356-G Topics in Literary Criticism and Theory
Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Pre- or Corequisite: EGL 204 Advisory Prerequisite: EGL 204 3 credits

EGL 367-G Contemporary African-American Literature
The study of contemporary African American literature focused in varying ways, including literary and cultural traditions, and relations to other writers and traditions in American literature. Prerequisite: U3 or U4 standing Advisory Prerequisite: EGL 274 or AH 206 3 credits

EGL 368-G Caribbean and American Connections in Literature
An exploration of the connections between writers from the French-speaking and English-speaking Caribbean and from the African American community, who share a similar cultural heritage, historical heritage, and historical experience, but differ in geopolitical situations. Special attention is paid to spirituality, gender, and identity motifs in the literature. This course is offered as both AHF 268 and EGL 368. Prerequisite: U3 or U4 standing Advisory Prerequisite: A literature course at the 200 level or higher 3 credits

EGL 369-G Topics in Ethnic American Studies in Literature
The study of ethnic American literature and cultures in historical perspective. Topics may include history of the American city in literature, ethnicity in 19th- and 20th-century American literature. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisite: U3 or U4 standing Advisory Prerequisite: A literature course at the 200 level or higher 3 credits

EGL 371-G Topics in Gender Studies in Literature
Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisite: U3 or U4 standing Advisory Prerequisite: A literature course at the 200 level or higher 3 credits

EGL 372-G Topics in Women and Literature
The study of texts written by and about women and of issues they raise relating to gender and literature. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. This course is offered as both EGL 372 and WST 372. Prerequisite: U3 or U4 standing Advisory Prerequisite: A literature course at the 200 level or higher 3 credits

EGL 373-J Literature in English from Non-Western Cultures
The study of literature in English from a nation or a region of the world that is significantly different from the United States and Europe. Semester Supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisite: U3 or U4 standing Advisory Prerequisite: A literature course at the 200 level or higher 3 credits

EGL 374-G English Literature in Relation to Other Literatures
The study of literature in English as it affects and is affected by other literatures. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisite: U3 or U4 standing Advisory Prerequisite: A literature course at the 200 level or higher 3 credits
EGL 375-G, 377-G Literature in English in Relation to Other Disciplines
The study of literature in English as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology. Semester Supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisite to EGL 375: U3 or U4 standing for content of the department. Request of instructor and department. Required of students seeking certification in secondary school English. Prerequisite: Admission to the English Secondary Teacher Education Program Corequisite: Equivalent section of EGL 449 3 credits

EGL 449, 450 Field Experience, Grades 7-12
Observation, inquiry, and practice in English education at the secondary level including 56 hours of documented visitations and observation at documented sites. Field experience writing logs are the basis for group discussion. Satisfactory/Unsatisfactory grading Corequisite to EGL 449: Equivalent section of EGL 441 Corequisite to EGL 450: Equivalent section of EGL 440 1 credit per course, S/U grading

EGL 451 Supervised Student Teaching-English; Middle Level Grades 7-9
Prerequisites: Enrollment in the English Secondary Teacher Education Program; permission of instructor Corequisites: Equivalent sections of EGL 452 and 454 6 credits, S/U grading

EGL 452 Supervised Student Teaching-English; High School Grades 10-12
Prerequisites: Enrollment in the English Secondary Teacher Education Program; permission of instructor Corequisites: equivalent sections of EGL 451 and 452 6 credits, S/U grading

EGL 454 Student Teaching Seminar
Seminar on problems and issues of teaching English at the secondary school level. Analysis of actual responsibilities and issues encountered by the teacher candidate in the student teaching experience. Prerequisite: C or higher in EGL 441 Corequisites: Equivalent sections of EGL 451 and 452 3 credits

EGL 475, 476 Undergraduate Teaching Practica I, II
Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. In EGL 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have been graded. Students may not serve as teaching assistants in the same course twice. Prerequisites to EGL 475: Upper-division standing; 12 credits in English; permission of instructor and director of undergraduate studies Prerequisites to EGL 476: EGL 475; permission of instructor and director of undergraduate studies 3 credits per course, S/U grading

EGL 487 Independent Project
Intensive study of a special topic undertaken with close faculty supervision. Request for project proposal of undergraduate studies committee must be submitted no later than the last week of classes of the prior semester. May be repeated. Prerequisite: Permission of instructor and director of undergraduate studies 0-6 credits

EGL 488 Internship
Participation in local, state, and national public and private organization. The work must involve skills related to the educational goals of the department. Request for approval of the undergraduate studies committee for internships must be submitted no later than the last week of classes of the prior semester. Prerequisites: 12 credits of English; 2.50 g. p. a.; permission of instructor and department 0-6 credits, S/U grading
EGL 490 Honors Seminar
Advanced work in periods, genres, and authors of English and American literature is offered in small classes. May be repeated for credit with the permission of the director of undergraduate studies as the topic changes.
Prerequisite: Permission of instructor
3 credits

EGL 496 Senior Honors Project
Prerequisites: EGL 490; permission of department
3 credits

ENS Environmental Studies

ENS 101-E Prospects for Planet Earth
An introduction for non-science majors to global environmental change. Exploration of the natural science of Earth's environment; the scientific, socioeconomic, and political issues that influence human impact on the global environment and responses to environmental changes; the strategies for humans to live in greater harmony with planet Earth. Global issues are related to the particular issues of the United States, the Northeast, and the greater metropolitan New York City-Long Island area.
3 credits

ENS 119-E Physics for Environmental Studies
The principles of physics as they apply to environmental issues. A review of mathematics is followed by a discussion of Newton's laws, conservation principles, topics in fluids and wave motion, optical instruments, and radioactivity. Three lectures and one laboratory session per week. This course is offered as both ENS 119 and PHY 119.
Prerequisites: MAT 123; CHE 131
4 credits

ENS 301-H Contemporary Environmental Issues and Policies
The scientific, socioeconomic, legal, and legislative aspects of current environmental issues and policies. Invited experts address current environmental issues and policies of local, regional, and global significance. Topics may include land use practices and reform; farmland and open space preservation; soil and water conservation; wetlands protection and rehabilitation; waste management and reduction, recycling, and composting; air pollution, global warming, and sea level rise; and marine wilderness areas.
Prerequisite: One of the following: GEO 101, MAR 104, ATM 102, or ENS 101
4 credits

ENS 311-H Ecosystem Ecology and the Global Environment
Ecosystem ecology with an emphasis on biogeochemical cycling in oceans and on land, as well as on biosphere-atmosphere interactions. Topics include earth system processes such as climate and atmospheric composition, the hydrological cycle, cycling of chemicals such as nutrients and metals in the oceans, the soil cycle, and the fate and transport of materials in the atmosphere. Natural and perturbed systems are discussed. This course is offered as both BIO 386 and ENS 311.
Prerequisites: BIO 201; CHE 131
Advisory Prerequisite: MAR 104
3 credits

ENS 312-H Population, Technology, and the Environment
A study of the biological, social, and economic factors that influence population growth. The development of new technologies and their influence on resource use and the effects that increasing population and changing technologies have on the environment are explored.
Prerequisites: BIO 113; MAR 340
3 credits

ENS 333 Environmental Law
Survey of the origins of environmental law and the major legislation enacted by Congress and the state of New York. Special emphasis is placed on the application of environmental law to the problem of solid waste management on Long Island. This course is offered as both ENS 333 and POL 333.
Prerequisites: ECO 108; POL 102
3 credits

ENS 443 Environmental Problem Solving
The integration of information and skills from the natural sciences, social sciences, engineering and the humanities to address important environmental problems. An environmental problem of current interest is presented. Working in small groups, students develop a proposal to solve the problem, collect and analyze data, and present results. Data collection may include field and laboratory work outside of scheduled class meetings.
Prerequisites: U3 or U4 standing; ENS major or minor
2 credits

ENS 487 Independent Research in Environmental Studies
An independent project, developed out of advanced coursework in environmental studies, designed in consultation with and supervised by a faculty member. The project should be formulated before the start of the semester in which the research will be done and should culminate in a substantial written paper. May be repeated.
Prerequisites: Permission of a supervising faculty member and MSRC Undergraduate Programs Director
0-6 credits

ENS 488 Internship in Environmental Studies
Internships provide students with an opportunity of gaining experience working in the community at government agencies, environmental groups, aquaria, summer camps, field studies, etc. A suitable proposal must be presented by the student and approved by the Director of Undergraduate Studies before the internship begins. May be repeated for a maximum of 6 credits for the ENS major, 3 credits for the ENS minor.
Prerequisite: Permission of the MSRC Undergraduate Programs Director
0-6 credits, S/U grading

ESE Electrical Engineering

ESE 123 Introduction to Electrical and Computer Engineering
Introduces basic electrical and computer engineering concepts in a dual approach that includes laboratories for hands-on wired and computer simulation experiments in analog and logic circuits, and lectures providing concepts and theory relevant to the laboratories. Emphasizes physical insight and applications rather than theory.
Prerequisites: MAT 125 or ENS 119
Advisory Prerequisites: PHY 119 and PHY 127 or PHY 127 and CSE 220
3 credits

ESE 124 Computer Techniques for Electronic Design
An extensive introduction to problem solving in electrical engineering using the ANSI C language. Topics covered include data types, operations, control flow, functions, data files, numerical techniques, pointers, structures, and bit operations. Students gain experience in applying the C language to the solution of a variety of electrical engineering problems, based on concepts developed in ESE 123. Knowledge of C at the level presented in this course is expected of all electrical engineering students in subsequent courses in the major.
Prerequisites: AMS 151 or MAT 125 or 131 or 141; ESE 123 or equivalent
2 credits

ESE 211 Electronics Laboratory A
Introduction to the measurement of electrical quantities; instrumentation; basic circuits, their operation and applications; electronic devices; amplifiers, oscillators, power supplies, wave-shaping circuits, and basic switching circuits.
Prerequisite: ESE 271
Corequisites: ESE 372
2 credits

ESE 218 Digital Systems Design
Develops methods of analysis and design of both combinational and sequential systems regarding digital circuits as functional blocks. Utilizes demonstrations and laboratory projects consisting of building hardware on breadboards and simulation of design using CAD tools. Topics include number systems and codes; switching algebra and switching functions; standard combinational modules and arithmetic circuits; realization of switching functions; latches and flip-flops; standard sequential modules; memory, combinational, and sequential PLDs and their applications; design of system controllers.
Prerequisite for engineering majors: PHY 127 or 132/134 or 142 or ESE 124
Prerequisite for computer science majors: CSE 220
5 credits

ESE 231 Introduction to Semiconductor Devices
The principles of semiconductor devices. Energy bands, transport properties, and generation recombination phenomena in bulk semiconductors are covered; followed by junctions between semiconductors and metal-semiconductor. The principles of operation of diodes, transistors, light detectors, and light emitting devices based on an understanding of the electrical behavior of physical phenomena in semiconductors. Provides background for subsequent courses in electronics.
Prerequisites: AMS 161 or MAT 127 or 132 or 142; PHY 127 or 132/134 or 142
3 credits

ESE 271 Electrical Circuit Analysis I
Kirchhoff's Laws, Ohms Law, nodal and mesh analysis for electric circuits, capacitors, inductors, and steady-state AC; transient analysis using Laplace Transform. Fundamentals of AC power, coupled inductors, and two-ports.
Prerequisites: AMS 161 or MAT 127 or 132 or 142; PHY 127 or 132/134 or 142
4 credits

ESE 290 Transitional Study
A vehicle used for transfer students to remedy discrepancies between a Stony Brook course and a course taken at another institution. For example, it allows the student to take the laboratory portion of a course for which he or she has had the theoretical portion elsewhere. Open elective credit only.
Prerequisite: Permission of department
1-3 credits

ESE 300 Writing in Electrical/Computer Engineering
See requirements for the majors in Electrical Engineering and Computer Engineering, upper-division writing requirement.
3 credits

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COURSE DESCRIPTIONS

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