

841. Optimization of Urban Traffic Flow

Fall of odd-numbered years. 3(3-0)
Approval of department. Interdepartmental with Civil Engineering.

Traffic flow models used in design of computerized traffic control systems. Optimal freeway ramp metering algorithms. Offline and online optimization of traffic signal timing.

843. Ecosystem Analysis, Design and Management

Spring. 3(3-0) SYS 442 or ZOL 404.
Interdepartmental with the Department of Zoology.

Groups of students from various biological and nonbiological disciplines will synthesize and analyze models of selected biological systems. Project should yield information relevant to solution of contemporary ecological problems.

847. Communication Engineering

Fall. 4(4-0) E E 456 or approval of instructor. Interdepartmental with and administered by Electrical Engineering.

Communications in probabilistic channels. Measures in system performance. Channel models. Optimal reception of analog and digital signals. Coding for various channel models. Detection of targets. Signal solution.

848. Communication Theory

Spring. 3(3-0) E E 847, E E 880, F E 863. Interdepartmental with and administered by Electrical Engineering.

Hypothesis testing, decision theory and parameter estimation in communications and signal processing. Optimal filtering techniques. Communication in non-white noise. Communication in non-Gaussian noise. Quantum detection theory.

851. Modeling of Engineering Systems I

Fall. 3(3-0) M E 458 or E E 415. Interdepartmental with and administered by the Department of Mechanical Engineering.

Modeling of engineering components and dynamic systems; mechanical, electrical, fluid, thermal, and transducer effects. Linear state-space responses, impedance methods. Simulation of linear models. Design project.

852. Modeling of Engineering Systems II

Winter. 3(3-0) M E 851. Interdepartmental with and administered by the Department of Mechanical Engineering.

Continuation of M E 851. Modeling of nonlinear dynamic systems. Applications of phase-plane and linearization methods. Simulation of nonlinear systems. Design project.

863. Analysis of Stochastic Systems

Winter. 3(3-0) E E 415, E E 456. Interdepartmental with Electrical Engineering.

Analysis and modeling of stochastic signals and systems. Topics include stochastic models, description of processes, stationarity, ergodicity, correlation and power spectrum, linear stochastic systems, harmonic analysis, Markov processes, Poisson processes.

880. Signal Analysis

Winter. 3(3-0) Approval of department. Interdepartmental with and administered by Electrical Engineering.

Continuous and discrete signals—generation, representation and classification. Fourier transform, spectral analysis and filtering for continuous and discrete signals. Computer implementation of signal processing.

899. Master's Thesis Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

947. Topics in Communications

Fall of odd-numbered years. 3(3-0)
May reenroll for a maximum of 6 credits. E E 848. Interdepartmental with and administered by Electrical Engineering.

Advanced treatment of a topic or group of topics of current research interest in the field of communications, information theory and signal processing.

961. Optimal Control Theory

Fall. 3(3-0) SYS 827, MTH 426.

Optimal control, performance measures, principle of optimality, dynamic programming, Hamilton-Jacobi-Bellman equation, variational approach, constrained extrema, Pontryagin principle, necessary conditions, solution techniques, singular cases.

962. Computational Techniques for Optimal Control

Winter of odd-numbered years. 3(3-0) SYS 961.

Computational methods of optimal controls, steepest descent, variation of extremals, quasilinearization, gradient projection, dynamic programming, convexity techniques, support functions for reachable sets, current literature.

963. Dynamic System Identification and Control

Spring of odd-numbered years. 3(3-0) SYS 863, SYS 829.

System identification; dynamic programming; stochastic and adaptive control. Topics under identification include review of statistics background, dynamic system models, identification methods, recursive algorithms, input design, and structure discrimination.

964. Large Scale Dynamic Systems

Winter of even-numbered years. 3(3-0) SYS 961.

Model simplification; stability of large scale systems; decentralized control; optimization by decomposition and coordination; multilevel hierarchical control; applications.

999. Doctoral Dissertation Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

ENGINEERING EGR

College of Engineering

1255. Orientation to Engineering Careers

Winter. 2(2-0) Credits earned in this course are included in computation of GPA and MAPS but are not included in the 180 credits required for graduation.

Engineering careers, history and philosophy of engineering profession, present and future challenges, industrial job functions, employment trends.

200. Technology, Society and Public Policy

Winter. 3(3-0) Twelve credits from natural science or engineering. Interdepartmental with the Department of Natural Science.

Description and analysis of certain current technologies and their consequences; exploration of avenues for assessing such consequences as an aid to formulation of public policy.

270. Computer Graphics

Spring. 3(3-0) EGR 160 or EGR 161; CPS 110 or CPS 120; or approval of department.

Use of computer controlled display systems for the solution of multidimensional problems.

290. Selected Topics

Fall, Winter, Spring, Summer. 1 to 3 credits May reenroll for a maximum of 6 credits if different topics are taken.

Experimental course developments or special topics appropriate for freshmen and sophomores.

344. Engineering Cooperative Education

Fall, Winter, Spring, Summer. Zero credits. [3 credits-See page A-1, item 3.] May reenroll for a maximum of six terms. Employment assignment approved by College of Engineering.

Pre-professional employment in industry and government related to student's major.

390. Value Engineering

Fall, Winter, Spring. 4(4-0) MMM 280 or approval of department.

The basis of value engineering is function, value, and a group of special techniques developed to aid in isolating and identifying problems created by our complex society and technology.

401. Engineering and Public Policy

Spring. 3(3-0) Seniors or approval of department. Interdepartmental with the Department of Natural Science.

Sociotechnical assessment of impact of technology on society, with analysis of the role of engineering and natural science in contributing to public policy formulation.

ENGLISH ENG

College of Arts and Letters

091. English for Foreign Students-Structures

Fall, Winter, Spring, Summer. Zero credits. [3(5-0) See page A-1 item 3.] English language proficiency examination.

Explanation and intensive practice of basic grammatical structures of English. Students are tested and then placed in small groups, from beginning to advanced, depending on their need.

092. English for Foreign Students-Speaking and Listening

Fall, Winter, Spring, Summer. Zero credits. [3(5-0) See page A-1 item 3.] English language proficiency examination.

Intensive speaking and listening practice of spoken English in small groups (determined by proficiency). For beginners, practice is largely drill. Advanced groups use drill, films, discussion, and practical conversations.

093. English for Foreign Students-Language Laboratory

Fall, Winter, Spring, Summer. Zero credits. [3(5-0) See page A-1 item 3.] English language proficiency examination.

Language laboratory practice in small groups (determined by proficiency). Beginnings review and supplement ENG 091, ENG 092. Advanced groups use carefully prepared lectures, speeches, and presentations to practice structures and vocabulary.

- 094. English for Foreign Students—Reading**
Fall, Winter, Spring, Summer. Zero credits. [3(5-0) See page A-1 item 3.] English language proficiency examination.
Intensive and extensive reading in small groups (determined by proficiency). Beginners emphasize vocabulary development and practice in basic structures. Advanced classes include reading skills, wider reading, and specialized vocabulary.
- 095. English for Foreign Students—Writing**
Fall, Winter, Spring, Summer. Zero credits. [3(5-0) See page A-1 item 3.] English language proficiency examination.
Frequent controlled and free writing in small groups to reduce errors and practice using structures and vocabulary to express ideas. Advanced classes include writing styles used in academic course work.
- 101. Responses Through Writing**
Fall. 4(4-0) Arts and Letters Freshmen only. Students must enroll in and complete ENG 102 satisfactorily to make a substitution for the American Thought and Language requirement.
A writing workshop that concentrates on the student's personal writing voice and on his responses to the things, people, and institutions central to his experience.
- 102. Writing and Composing**
Winter. 5(5-0) ENG 101; Arts and Letters Freshmen only.
A continuation of ENG 101 that develops the emphases of ENG 101 and encourages students to write in more public and objective forms—narrative, critical analysis, and issue-oriented essays.
- 126. The Writer and Literature**
Fall, Winter, Spring. 3(3-0) The first term of ATL 121 or above or ENG 101.
Modern literature from the writer's perspective. Students also write their own critical and creative work, using journal method.
- 200H. Honors Work**
Fall, Winter, Spring. 1 to 16 credits. Approval of department.
- 201. Nature of Language**
Fall, Winter, Spring, Summer. 3(3-0)
Various aspects of language—phonology and orthography; morphology, semantics and the lexicon; syntax; and dialects—with special reference to American English.
- 205. Introduction to Shakespeare**
Fall, Winter, Spring. 3(3-0) Not applicable to major or minor requirements.
A study of selected plays illustrating the powers of England's greatest writer.
- 206. Forms of Literature: Fiction**
Fall, Winter, Spring, Summer. 3(3-0) Open to Freshmen.
Major forms of prose fiction, designed to reveal artistic problems met and solved by these forms. Prepares students for advanced literary study by acquainting them with the conventions of various literary forms, by providing a critical vocabulary and by furnishing experience in reading and writing critical evaluations of outstanding literary works from all historical periods.
- 207. Forms of Literature: Drama**
Fall, Winter, Spring, Summer. 3(3-0) Open to Freshmen.
Major forms of drama, designed to reveal artistic problems met and solved by these forms.
- 208. Forms of Literature: Poetry**
Fall, Winter, Spring, Summer. 3(3-0) Open to Freshmen.
Major forms of poetry, designed to reveal artistic problems met and solved by these forms.
- 210. Introduction to the Study of Literature I**
Fall, Winter. 4(4-0) English majors or prospective English majors.
Exploration of the major forms of literature, the aims and process of literary study, the cultural and personal functions of literature, and the role of literary study in the University.
- 211. Introduction to the Study of Literature II**
Winter, Spring. 4(4-0) ENG 210.
A continuation of ENG 210.
- 213. Writing Workshop**
Fall, Winter, Spring, Summer. 3(3-0) Completion of the American Thought and Language General Education requirement.
A writing workshop designed to help students improve their writing abilities. The course provides opportunities for students to write with different purposes in a variety of modes.
- 220. English from Greek and Latin Roots**
Fall. 3(3-0) Interdepartmental with and administered by Classical Languages.
Prefixes, roots, suffixes derived from Greek and Latin word elements used in formation of English words. Useful for improving vocabulary and spelling.
- 226. Introduction to Creative Writing**
Fall, Winter, Spring. 4(4-0) The first term of ATL 121 or above or ENG 101.
Writing of fiction, drama, creative nonfiction, and poetry, with ample practice in several. Some reading of professional contemporary writing. Course organized as workshop, designed for beginning writers.
- 228A. Fiction Writing**
Fall, Winter, Spring, Summer. 4(4-0) Written approval of instructor.
The writing of short fiction. Classes and individual conferences. Approval to enroll requires a conference with the instructor and will usually be on the basis of manuscripts submitted to him.
- 228B. Fiction Writing**
Fall, Winter, Spring, Summer. 4(4-0) Written approval of instructor.
The writing of fiction. Classes and individual conferences. Approval to enroll requires a conference with the instructor and will usually be on the basis of manuscripts submitted to him.
- 229. Poetry Writing**
Fall, Winter, Spring. 4(4-0) Written approval of instructor.
The writing of poetry. Classes and individual conferences. Approval to enroll requires a conference with the instructor and will usually be on the basis of manuscripts submitted to him.
- 230. Non-fictional Imaginative Prose Writing**
Fall, Winter, Spring. 4(4-0) Written approval of instructor.
The writing of biography, autobiography, and personal essays. Classes and individual conferences.
- 241. Introduction to Popular Culture (A)**
Fall, Winter, Spring. 3(3-0) Freshmen or Sophomores.
Generic and thematic study of the arts and artifacts of popular culture with particular emphasis on writing about the popular culture of contemporary American society.
- 242. Popular Literary Forms**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 6 credits. Freshmen or Sophomores.
Study of a particular genre of popular literature (e.g., science fiction, western, gothic) through reading, discussion, and writing, and with attention to the genre's development in media other than print.
- 250. Major Themes in English and American Literature**
Fall, Winter, Spring, Summer. 3(3-0) May reenroll for a maximum of 6 credits.
A particular theme of significant works of English and American writers in a relevant social or cultural context. Reading, discussion and writing are essential activities.
- 302. Introduction to English Language Studies**
(401.) Fall, Winter, Spring, Summer. 4(4-0)
The English language, including such topics as social and regional dialects, sounds, grammar, usage, psycholinguistics and semantics. Attention is given to practical applications.
- 303. Grammar and Usage**
Winter, Spring. 4(4-0) Completion of the ATL requirement or approval of department.
Survey of the history and philosophy behind standards of correctness. Review of traditional grammatical terms. Intensive study and practice of usage rules.
- 310. Writing for Prelaw Students**
(J M 310.) Fall, Winter, Spring. 3(3-0)
Provides a step-by-step process for organizing and writing a legal argument. Emphasizes a logical, clear, and persuasive style.
- 312. Advanced Workshop in Expository Writing**
Winter, Spring. 3(3-0) ENG 213 or approval of department.
Directed practice in the writing of clear, concise, and forceful expository prose, with special emphasis on practical writing tasks like the composing of summaries, reports, and position papers.
- 313. Scientific Writing**
Winter, Spring. 3(3-0) Science students or students with considerable background in the natural sciences.
Writing of papers, reports and essays.
- 327. Playwriting**
(300C.) Winter, Spring. 4(4-0) May reenroll for a maximum of 8 credits. Written approval of instructor.
Basic elements of playwriting: dramatic action, exposition, plotting, characterization, dialogue, mood, and visual effects. Class work will also include discussion of plays.

Descriptions - English

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- 328. Advanced Fiction Writing**
(300A.) Fall, Winter, Spring, Summer.
4(4-0) May reenroll in ENG 328 and/or ENG 329 for a maximum of 12 credits. ENG 228B and written approval of department.
Advanced work in the writing of fiction. Classes and individual conferences. Approval to enroll requires a conference with the instructor and will usually be based on manuscripts submitted to the instructor.
- 329. Advanced Poetry Writing**
(300B.) Fall, Winter, Spring, Summer.
4(4-0) May reenroll in ENG 328 and/or ENG 329 for a maximum of 12 credits. ENG 229 and written approval of department.
Advanced work in the writing of poetry. Classes and individual conferences. Approval to enroll requires a conference with the instructor and will usually be based on manuscripts submitted to the instructor.
- 330. Composition for Secondary English Teachers**
(214.) Fall, Winter, Spring. 4(3-4)
Sophomore English Education majors or written approval of department.
Writing practice in various modes such as personal narrative and description, the familiar essay, drama, poetry, and fiction. Exercises in creative dramatics. Discussion of the process of composing and the teaching of oral and written composition in junior and senior high schools. Will participate in field experience.
- 331. Literature and the Adolescent**
(301.) Fall, Winter, Spring. 4(3-4) ENG 208; Junior English education majors or written approval of department.
Extensive reading of literature appropriate for secondary school students. Discussion of formal literature programs in relation to student's reading needs. Methods of analyzing literature and establishing common and individualized reading programs. Will participate in field experience.
- 332. English Field Experience Internship**
(309.) Fall, Winter, Spring, Summer. 3 to 5 credits. May reenroll for a maximum of 8 credits. ENG 330, ENG 331, or ENG 408A or concurrently.
Intensive field experience in English. Interns will be placed in schools for work in middle, junior, and senior high school classrooms and learning centers in the Lansing area.
- 340. Studies in Popular Culture**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 9 credits. Majors: ENG 208; others: 6 credits of literature.
Popular Cultures of the United States and England from the 19th Century to the present.
- 342. Women and Literature**
Fall, Winter, Spring. 3(3-0) Third term
ATL course numbered ATL 123 or above or ENG 102.
The feminine sensibility as revealed in literary themes and characterizations, through a study of poetry and fiction written by women authors.
- 343. Regional American Literature**
(375.) Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 9 credits if different topics are taken.
Representative works of a particular geographical region as expressions of its distinctive cultural, historical, and literary characteristics, e.g., in a given term, the Middle West, South, New England, or Far West.
- 344. Jewish-American Literature (A)**
(377.) Winter. 3(3-0)
The Jewish-American experience as reflected in fiction, drama, poetry, essay, autobiography, film.
- 347. Literature and Film**
Fall, Winter, Spring. 3(3-0) ENG 208 or ENG 211.
Introduction to the relationship between film and literature through study of theme, style, and structure in selected film masterpieces from different periods and cultures.
- 349. Afro-American Literature I**
(449.) Fall, Winter, Summer. 4(4-0)
Majors: ENG 208; others: 6 credits of literature.
Creative thought of the black American illustrated by the participation of the black man in American culture from beginnings through Harlem Renaissance.
- 350. Afro-American Literature II**
(450.) Winter, Spring, Summer. 4(4-0)
Majors: ENG 208; others: 6 credits of literature.
Creative thought of the black American illustrated by the participation of the black man in American culture—post-World War II.
- 351. English Literature I**
Fall. 4(4-0)
Survey of English literature to Milton. Major representative writers and literary forms of the specified period.
- 352. English Literature II**
Winter. 4(4-0)
Survey of English literature, Milton to Blake. Major representative writers and literary forms of the specified period.
- 353. English Literature III**
Spring. 4(4-0)
Survey of English literature, Blake to Hardy. Major representative writers and literary forms of the specified period.
- 360. World Literature in English**
(315.) Fall. 3(3-0) Interdepartmental with Linguistics and Oriental and African Languages.
Representative works, not from England or the United States, which were written originally in English, especially the English literature of present or former British Commonwealth nations, and nations from the Middle East and Africa.
- 361. World Literature in English Translation**
(316.) Winter. 3(3-0) Interdepartmental with and administered by Linguistics and Oriental and African Languages.
Significant and characteristic works of the Orient, the Middle East, and Africa in English translation.
- 362. Genres and Themes in World Literature**
(317.) Spring. 3(3-0) Interdepartmental with Linguistics and Oriental and African Languages.
Work will center each term around a single literary genre, type or theme. Typical examples: The Quest, Literature of Revolt, Satire. Literary examples will be selected from several national literatures.
- 363. African Literature in English**
(318.) Winter, Spring. 3(3-0) HST 394 or HUM 295 or IDC 390 recommended.
Contemporary African literature written in English, including novels by Soyinka, Achebe, Ngugi, Armah, La Guma, and Ekwensi; plays and poetry by Clark, Hutchinson, Nkosi, Henshaw, Okara, Awoonor, Okigbo, and others.
- 364. Canadian Literature and Culture**
(376.) Spring. 4(4-0) May reenroll for a maximum of 8 credits.
Canadian literature and culture in bicultural, historical and contemporary contexts.
- 365. Classic Myths and Literature**
(345.) Fall, Winter, Spring. Summer of even-numbered years. 3(3-0)
Greek myths that have been wrought into later poetry, fiction, drama, painting, sculpture, and music.
- 366. Literary Interpretation of the Bible**
(346.) Fall, Winter, Spring. 3(3-0)
Literary study of the Old and New Testaments, with emphases upon the ideas and events which figure prominently in English and American literature.
- 380. Masterpieces of American Literature**
Fall, Winter, Spring, Summer. 3(3-0)
Not applicable to major or minor requirements.
Selected masterpieces of American literature.
- 381. Masterpieces of English Literature**
Fall, Winter, Spring, Summer. 3 credits. Not applicable to major or minor requirements.
Selected masterpieces of English literature.
- 382. Masterpieces of Contemporary Literature**
Fall, Winter, Spring, Summer. 3(3-0)
Not applicable to major or minor requirements.
Selected masterpieces of contemporary literature.
- 399. Perspectives on Literature and English Language**
Fall, Winter, Spring, Summer. 4(4-0)
May reenroll for a maximum of 12 credits if different topics are taken.
A rich variety of perspectives on literature and English language for majors and non-majors. Approach and content differs with each section.
- 400. Tutorial**
Fall, Winter, Spring, Summer. 1 to 5 credits. May reenroll for a maximum of 10 credits. Majors; approval of department.
Reading, discussion, and writing under the guidance of a faculty member.
- 400H. Honors Work**
Fall, Winter, Spring. Variable credit.
Open to particularly able students. Consists of individually supervised study of a phase of literary history.
- 402. Modern English Grammar**
Winter, Spring. 4(4-0) ENG 302 or approval of department.
English morphology and syntax, incorporating insights from current linguistic theory and practice.

- 403. The Development of Modern English**
Winter. Summer of even-numbered years. 4(4-0)
Historical development of the language; native and foreign elements; changes in inflections, pronunciation, vocabulary, meaning.
- 404. American English**
Fall. 4(4-0)
Characteristic American dialects, standard and non-standard, with analysis of usage and explanations of origins and differences.
- 406. Comparative Linguistics**
Spring. 5(4-0) ENG 402, ENG 403; 2 college years of a foreign language or approval of department.
Techniques for the scientific comparison of related languages. The comparative method and the results of its application to the Indo-European languages.
- 407. Methods of Teaching English as a Second Language**
Fall. 4(4-0) ENG 302 or ENG 402 or approval of department.
Survey and demonstration of theories, methods and techniques for teaching English, both here and abroad, to school age children and adults who are not native speakers of English.
- 408A. Problems in the Teaching of Reading**
Fall, Winter, Spring. 5(3-5) ENG 330 or ENG 331, ENG 302.
Instruction and field experience in the teaching of reading for prospective English teachers.
- 408B. Problems in the Teaching of Reading**
Fall, Winter, Spring. 4(3-4) ENG 408A.
Instruction and independent work on the teaching and learning of reading with strong emphasis on field experience.
- 408C. Problems in the Teaching of Reading**
(408.) Fall, Winter, Spring. 4(3-4) ENG 408B.
Instruction and independent work in developing junior and senior high school reading programs. Will participate in field experience.
- 409. Teaching Competencies in English**
Fall, Winter, Spring, Summer. 4(4-0) ENG 330, ENG 331, or ENG 408A or ED 327D. ENG 332 concurrently.
Practicum in the development of teaching competencies in the fundamentals of reading and writing within a humanistic English curriculum. Analysis of accountability models and assessment instruments in English.
- 410. Chaucer**
Fall, Winter, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Chaucer's poetry, especially 'The Canterbury Tales'. Read in Middle English.
- 411. Spenser**
Winter. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
A representative selection of Spenser's poetry with special emphasis on "The Faerie Queene".
- 412. Milton**
Fall, Winter, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Milton's prose and poetry, especially 'Paradise Lost'.
- 418. Scandinavian Contributions to Literary Tradition**
Winter. 3(3-0) Approval of department. Interdepartmental with German and Russian and the Department of Romance and Classical Languages. Administered by German and Russian.
Development and influence of the ideas, forms and motifs of the Scandinavian literatures in the literatures of the world.
- 421. Shakespeare**
Fall, Winter, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Study of the following representative plays: 'Richard II', 'Richard III', 'Hamlet', 'Othello', 'Julius Caesar', 'Romeo and Juliet', 'Twelfth Night', 'Winter's Tale', 'Midsummer-Night's Dream'.
- 422. Shakespeare**
Fall, Winter, Spring, Summer. 4(4-0) ENG 421.
Advanced study of several representative plays exclusive of those taught in ENG 421.
- 423. Writing: Style and Technique**
(J M 410.) Fall, Winter, Spring. 3 to 8 credits. May reenroll for a maximum of 8 credits. ATL 123.
Intensive individual and seminar instruction in advanced composition.
- 424. Conference Course in Advanced Writing**
Fall, Winter, Spring, Summer. 4 credits. Written approval of department.
Intended for the student ready to pursue an advanced project in writing. Individual conferences. Approval to enroll requires a conference with the instructor and will usually be on the basis of manuscripts submitted to him. Prior course work in writing will normally be expected.
- 425. Writing as a Profession**
Winter, Spring. 2(2-0) At least one creative writing course or approval of department.
Discussion of many questions and problems experienced by students interested in professional writing. A variety of panels and lectures by people who know the field.
- 426A. Comparative Drama**
Fall. 3(3-0) Majors: ENG 208; others: 6 credits of literature.
Studies in the development of drama: classical and medieval.
- 426B. Comparative Drama**
Winter. 3(3-0) Majors: ENG 208; others: 6 credits of literature.
Studies in the development of drama: Renaissance and seventeenth century.
- 426C. Comparative Drama**
Spring. 3(3-0) Majors: ENG 208; others: 6 credits of literature.
Studies in the development of drama: neoclassical and romantic.
- 426D. Comparative Drama**
Fall, Spring. 3(3-0) Majors: ENG 208; others: 6 credits of literature.
The development of drama: Ibsen to World War II.
- 426E. Comparative Drama**
Spring, Summer. 3(3-0) Majors: ENG 208; others: 6 credits of literature.
The development of drama: World War II to the present.
- 430. Advanced Writing: The Prose Essay**
(ATL 329) Spring 4(4-0) Completion of ATL General Education requirement, ENG 213 or approval of department.
Provides instruction in the acquiring of knowledge from the prose essay, making sophisticated inferences from the ideas collected, and formulating and supporting logical theses in the writing of such essays.
- 431. Writing the Research Report**
(ATL 439.) Winter, Spring. 4(4-0) Juniors.
Advanced methods and organization of written research reports will be taught by providing examples, exercises, and writing practice based on research submitted by the students.
- 432. Technical Report Writing**
(ATL 449.) Winter, Spring. 4(4-0) Completion of ATL General Education requirement, Juniors or approval of instructor.
Use and understanding of language through writing and editing clear, concise, purposeful technical reports, letters, instructions, proposals.
- 436. Comparative Fiction**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 9 credits. Majors: ENG 208; others: 6 credits of literature.
Types of narrative and fiction in various literatures and periods. Specific course content varies each term.
- 439. British Poetry and Poetic Theory Since 1890**
Winter, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Special emphasis on Hopkins, Hardy, Yeats, Auden and Thomas.
- 441. American Literature: Colonial and Revolutionary Period**
Fall. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Works of Taylor, Edwards, Franklin, Freneau and others.
- 442. American Literature: Early Romanticism**
Fall. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Works of Cooper, Irving, Poe, Emerson, Thoreau and others.
- 443. American Literature: Later Romanticism**
Winter, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Works of Hawthorne, Melville, Whitman, Dickinson and others.
- 446. American Literature: Realism and Naturalism**
Fall, Winter, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Rise and development of realism and naturalism as exemplified in the works of such authors as Twain, James, Dreiser, Robinson, and others.
- 447. Twentieth Century American Fiction**
Fall, Winter, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Works of Fitzgerald, Hemingway, Faulkner and others.

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- 448. Twentieth Century American Poetry**
Fall, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Works of Eliot, Pound, Frost and others.
- 452. Contemporary British Literature**
Fall. 4(4-0) Majors: ENG 206, ENG 207, ENG 208 or ENG 210, ENG 211; others: 9 credits of literature.
Contemporary British fiction, drama, poetry; such writers as Sillitoe, Powell, Murdoch, Osborne, Fowles, Larkin, and others.
- 453. Contemporary American Poetry**
Winter. 4(4-0) Majors, ENG 206, ENG 207, ENG 208 or ENG 210, ENG 211; others: 9 credits of literature.
American poetry from WW II to present: such writers as Roethke, Lowell, Plath and others.
- 454. Contemporary American Fiction**
Spring. 4(4-0) Majors, ENG 206, ENG 207, ENG 208 or ENG 210, ENG 211; others: 9 credits of literature.
American fiction from WW II to present: such writers as Mailer, Ellison, Barth, Updike, O'Connor, Pynchon, and others.
- 455. Tudor Literature**
Fall. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Poetry, prose and non-Shakespearean drama of the sixteenth century.
- 456. Early Seventeenth Century Literature**
Winter. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Some of the major literary works of 1600-1660.
- 460. The Age of Dryden and Pope**
Fall. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Literature of the Restoration and early eighteenth century, 1660-1744; Dryden, Pope, Swift, and others.
- 462. The Age of Johnson**
Spring. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Literature of later eighteenth century to 1785; Johnson and his circle, the novelists and others.
- 465. The English Romantic Period**
Fall, Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
The beginnings of romanticism; Blake, Wordsworth and Coleridge.
- 466. The English Romantic Period**
Fall, Winter, Spring. 4(4-0) Majors: ENG 208; others: 6 credits of literature
Continuation of ENG 465; Keats, Shelley, Byron.
- 467. Language and Culture**
Fall, Spring. 4(4-0) Approval of department. Interdepartmental with and administered by the Department of Anthropology.
A survey exploring the interconnectedness of language and culture. Special areas to be emphasized include: Child Language Learning; Linguistic and Cultural Contact Phenomena; 'Specialized' Languages, such as Cant, Argot, Trade Jargon, Lingua Franca; 'Hybridization' and 'Substratum'; Language and Cultural Change; a brief examination of Theories of Origins and of the Sapir-Whorf Hypothesis.
- 468. Nature of Myth**
Winter. 3(3-0)
Myth in some of its theoretical aspects, with special reference to the mythical character of literature.
- 471. Victorian Poets**
Spring. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Selected readings from Arnold, Browning, Tennyson and other poets.
- 474. Oral Folklore.**
Spring. 4(4-0)
The nature of folklore, its social functions, and its use in literature and drama.
- 477. Comparative Epic**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 9 credits. Majors: ENG 208; others: 6 credits of literature.
Each term will consider two epics. Fall: 'Odyssey' and the 'Book of Job'; Winter: Dante's 'Inferno' and Milton's 'Paradise Lost'; Spring: 'Beowulf' and the 'Song of Roland'.
- 478. Methods of Comparative Literature**
Fall. 3(3-0) Two of the following: ENG 206, ENG 207, ENG 208.
Rationale and techniques of study in comparative literature.
- 479. Classical Christian Contributions to Literary Tradition**
Spring of odd-numbered years. 3(3-0)
Two of the following: ENG 206, ENG 207, ENG 208.
Development and influence of the ideas, forms, and motifs of the ancient world and Christianity in literature of the world.
- 480. Literary Criticism: Theory and Practice**
Fall, Spring, Summer. 4(4-0) Senior majors.
A survey of literary theory; critical and historical approaches to literature.
- 481. Modern Critical Theory**
Winter. 4(4-0) Senior majors.
An examination of the principal modern theories of literary criticism.
- 484. Literature and Psychology**
Spring. 4(4-0) Juniors or approval of department. Interdepartmental with the Department of Psychology.
An application of psychological theory to the study of literature and an exploration of the ways in which literature enriches the theory which helps to illuminate it.
- 485. The English Novel Through the Eighteenth Century**
Fall, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Study of such writers as Richardson, Fielding, Smollett, Sterne, Austen, and others.
- 486. The English Novel in the Nineteenth Century**
Winter, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Study of such writers as Scott, Dickens, Thackeray, Eliot, Hardy and others.
- 487. The Modern English Novel**
Spring, Summer. 4(4-0) Majors: ENG 208; others: 6 credits of literature.
Study of such writers as Conrad, Ford, Joyce, Lawrence and others.
- 491H. Studies in Period**
Fall. 4(4-0) May reenroll for a maximum of 8 credits. To receive credit, both ENG 491H and ENG 492H must be completed satisfactorily. Six credits in English honors courses and approval of the departmental honors adviser.
A two-term study of specific writers in relation to their age is provided by ENG 491H and ENG 492H.
- 492H. Studies in Period**
Winter. 4(4-0) May reenroll for a maximum of 8 credits. To receive credit, both ENG 491H and ENG 492H must be completed satisfactorily. ENG 491H and approval of the departmental honors adviser.
Continuation of ENG 491H.
- 493H. Studies in Genre**
Winter. 4(4-0) May reenroll for a maximum of 8 credits. To receive credit, both ENG 493H and ENG 494H must be completed satisfactorily. Six credits in English honors courses and approval of the departmental honors adviser.
A two-term study of the conventions and techniques of a specific literary genre.
- 494H. Studies in Genre**
Spring. 4(4-0) May reenroll for a maximum of 8 credits. To receive credit both ENG 493H and ENG 494H must be completed satisfactorily. ENG 493H and approval of the departmental honors adviser.
Continuation of ENG 493H.
- 496H. Special Topics**
Fall, Winter, Spring. 4(4-0) May reenroll for a maximum of 12 credits. Approval of the departmental honors adviser.
Intensive study of some particular author, theme, problem or other critical topic.
- 497H. Senior Honors Essay**
Fall, Winter, Spring. 4 to 10 credits.
May reenroll for a maximum of 10 credits. Seniors and approval of departmental honors adviser.
A substantial piece of writing under the direction of selected faculty.
- 498. Topics in Comparative Literature**
Fall, Winter, Spring. 3(3-0) or 4(4-0) May reenroll for a maximum of 12 credits if different topics are offered. Interdepartmental with German and Russian, and the Department of Romance and Classical Languages. Administered by the Department of Romance and Classical Languages.
Varying topics on relationships among writers, themes, genres, movements and periods in different national literatures, and between literature and other arts.
- 499. Senior Proseminar**
Fall, Winter, Spring, Summer. 4(4-0) Senior English majors.
Intensive work in an area, problem or author. Students will work closely with the instructor in the preparation and evaluation of substantial research or critical papers.

The content of courses on both the 800-level and the 900-level may change from term to term, making possible a wide variety of course offerings. Students may enroll in a course for more than one term or in more than one section of a course during the same term, provided that duplication of content does not result. Brochures giving detailed information concerning all graduate courses to be offered during a given year are available in the English office throughout that academic year.

Courses numbered 900 or above (with the exception of 930, 970, and 999) are doctoral seminars. Students desiring to enroll in these courses must obtain departmental approval at least before registration, but if possible before the pre-enrollment period.

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- 800. History of the English Language**
Spring, Summer. 3 credits.
- 801. Old English**
Fall, Summer. 3 credits.
Phonology and morphology of English before 1100.
- 802. Beowulf**
Winter. 3 credits.
- 803. Old English Poetry**
Spring. 3(3-0) ENG 802.
Studies in Old English poetic literature: selections from the poetry of the Exeter Book or other works exclusive of 'Beowulf'.
- 804. Middle English**
Winter. 3(3-0)
Linguistic study of English writings, 1100-1400.
- 805. Studies in Comparative Theatre and Drama**
Fall, Winter, Spring, Summer. 3(3-0)
May reenroll for a maximum of 12 credits. Approval of department. Interdepartmental and jointly administered with the Department of Theatre.
Comparative study of selected playwrights, movements, trends and developments in world drama from the beginnings to the present day.
- 807. Advanced Methods of Teaching English as a Second Language**
Fall. 3(3-0) ENG 407.
Advanced study of linguistic theory and applications to classroom practice of methods of teaching English as a second language, specifically with regard to oral drill, reading, writing, testing, language and cultural heritage.
- 810. Medieval Literature**
Fall, Winter, Summer. 3(3-0)
Chaucer and the literature of the fourteenth century.
- 811. Renaissance Literature**
Fall, Winter, Spring. 3(3-0)
English nondramatic literature, 1500-1600.
- 815. Restoration and Eighteenth Century Literature**
Fall, Winter. 3(3-0)
English literature, 1660-1798.
- 816. Nineteenth Century Literature**
Fall, Winter, Spring, Summer. 3(3-0)
English literature, 1798-1900.
- 821. Nineteenth Century American Literature**
Fall, Winter, Spring, Summer. 3(3-0)
American literature, 1820-1900.
- 824. Seventeenth Century Literature**
Winter, Spring. 3(3-0)
English nondramatic literature, 1600-1660, including Milton.
- 825. Comparative Literature: Studies in Theme and Idea**
Fall. 3(3-0) May reenroll for a maximum of 9 credits. Interdepartmental with German and Russian and the Department of Romance and Classical Languages. Administered by the Department of Romance and Classical Languages.
Myths, archetypes, 'Topoi,' significant ideas and intellectual currents in different periods and cultural traditions.
- 828. Colonial and Revolutionary American Literature**
Winter. 3(3-0)
American literature, from the beginnings to 1820.
- 829. Twentieth Century Literature**
Fall, Spring. 3(3-0)
English and American literature, 1900 to the present, with attention to foreign backgrounds.
- 833. Writing Workshop: Poetry**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 6 credits. Approval of instructor.
Concentration on individual student's writing, through workshop discussion and conferences with instructor. Some attention to professional contemporary poetry.
- 835. Writing Workshop: Fiction**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 6 credits. Approval of instructor.
Concentration on individual student's writing, through workshop discussion and conferences with instructor. Some attention to professional contemporary fiction.
- 837. Writing Workshop: Drama**
Fall. 3(3-0) May reenroll for a maximum of 6 credits. Approval of instructor.
Concentration on individual student's writing, through workshop discussion and conferences with instructor. Some attention to professional contemporary drama.
- 840. Writing Workshop for Teachers**
Fall, Spring, Summer. 3(3-0) or 5(5-0)
Major in English-Secondary School Teaching or approval of department.
Exploration of the writing process through composition activities and examination of techniques for teaching writing.
- 841. Topics in the Teaching of English**
Winter, Spring. 3 to 5 credits.
Selected topics and issues in the teaching of English and the language arts. Investigation of problems of special concern to the students, especially those directly related to teaching.
- 845. Approaches to Language**
Fall. 3(3-0) Major in English-Secondary School Teaching or approval of department.
Modern linguistic approaches to language and their application to writing.
- 846. Approaches to Language**
Winter. 3(3-0) Major in English-Secondary School Teaching or approval of department.
Continuation of ENG 845.
- 847. Reading and the English Teacher**
Spring, Summer. 3(3-0) or 5(5-0)
Investigation of applied linguistics and psycholinguistics to the reading process with particular emphasis on the application to problems in the teaching of reading and literature.
- 849. English Teaching Workshop**
Fall, Winter, Spring, Summer. 2 to 5 credits.
Workshop in the development of teaching materials and resources in English. Investigation of sources and bibliographies. Emphasis on seeking practical solutions to particular problems in the teaching of English.
- 855. Shakespeare**
Fall, Spring. 3(3-0)
Intensive study of selected plays.
- 862. Approaches to Literature**
Winter, Summer. 5(4-0) Major in English-Secondary School Teaching or approval of department.
Literary and reading resources; discussion of critical approaches to and techniques for teaching literature.
- 871. Methods of Literary Research**
Fall, Spring, Summer. 3(3-0)
Bibliography and use of library: preparation of reports, reviews, and scholarly papers.
- 872. Methods of Research into Literacy**
Fall, Winter, Spring. 3(3-0) Graduate students.
Concepts and procedures of research for investigating the teaching and learning of English language and literature. Examination of representative studies and techniques for evaluating, designing, and conducting applied research.
- 878. Comparative Literature: Methods in the Study of Comparative Literature**
Fall. 3(3-0) Interdepartmental with German and Russian and the Department of Romance and Classical Languages.
Rationale and techniques of study in comparative literature.
- 879. Myth, Ritual and Folklore in Literature**
Fall. 3(3-0)
The concepts, scholarship, and methods of study and research in mythology, ritual, and folklore, with special attention to their use in literature and drama.
- 880. Proseminar for Master's Degree Candidates**
Fall, Winter, Spring, Summer. 3(3-0)
Individual scholarly work under guidance.

Descriptions – English

of Courses

- 885. *Studies in the History of Literary Criticism***
Fall, Winter, Spring, Summer. 3(3-0)
The history of literary criticism.
- 886. *Studies in Modern Criticism***
Fall, Winter, Spring, Summer. 3(3-0)
ENG 885.
Continuation of ENG 885.
- 895A. *College Teaching of English Language and Literature: History and Issues***
Fall. 3(3-0) Approval of department.
Literature, literary criticism, writing, and reading in the English language as academic subjects.
- 895B. *College Teaching of English Language and Literature: Reading***
Winter. 3(3-0) Approval of department.
Integration of the teaching of writing and reading in English with stress on relevant research in reading in such areas as: linguistics, applied linguistics, psycholinguistics, language acquisition.
- 895C. *College Teaching of English Language and Literature: Writing***
Spring. 3(3-0) Approval of department.
Integration of the teaching of writing and reading in English with stress on relevant research in writing and composition such as linguistics, applied linguistics, psycholinguistics, and language acquisition.
- 896. *Practicum in English Language and Literature***
Fall, Winter, Spring, Summer. 2 to 6 credits. Approval of department.
Supervised graduate practicums, observations, internships in the teaching of English language and literature.
- 899. *Master's Thesis Research***
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
- 902. *Comparative Literature: Studies in Form and Genre***
Winter, Spring. 3(3-0) Interdepartmental with German and Russian, and the Department of Romance and Classical Languages.
Development and interrelationships of individual and collective forms and genres of literatures of the Western world, including the drama, tragedy, the novel, the short story, the theory and forms of poetry, popular literature, and the tale.
- 903. *Comparative Literature: Studies in Periodization***
Fall, Winter, Spring. 3(3-0) Interdepartmental with German and Russian, and the Department of Romance and Classical Languages.
Analyses of the manner in which various genres, conventions and continuing traditions of literature interact with the creative and critical climates of particular periods and movements, such as classicism, the Middle Ages, the baroque, or romanticism, in qualifying or modifying characteristic literary works.
- 904. *Studies in Influence***
Fall, Winter, Spring. 3(3-0)
Mutual influences of the English, Romance and Germanic literatures in general and in terms of specific authors and literary kinds, together with studies of the intermediaries of transmission, translations and sources.
- 930. *Studies in English Drama***
Fall of even-numbered years. Spring of odd-numbered years. 3(3-0)
Liturgical beginnings to 1642.
- 940. *Studies in Shakespeare***
Winter of odd-numbered years. 3(3-0)
To receive credit, both ENG 940 and ENG 941 must be completed satisfactorily.
- 941. *Studies in Shakespeare***
Spring of odd-numbered years. 3(3-0)
To receive credit, both ENG 940 and ENG 941 must be completed satisfactorily.
- 970. *Graduate Reading Course***
Fall, Winter, Spring, Summer. 1 to 5 credits. Approval of department.
Supervised reading course in English and American literature for Ph.D. candidates.
- 973. *Seminar in English Education***
Spring, Summer. 3 to 5 credits. May reenroll for a maximum of 10 credits if different topics are taken. Approval of instructor.
Seminar in the teaching of English literature, language, and composition.
- 975. *The Reading Process and the Concept of Literacy***
Spring. 3(3-0) Approval of department.
The contributions of language and literary studies to our understanding of the reading process and our definitions of literacy.
- 980. *Studies in English Language***
Fall, Winter, Spring. 3(3-0)
The English language from the viewpoint of historical problems, literary analysis and pedagogical implications.
- 981. *Seminar: Earlier English Literature***
Fall, Winter, Spring. 3(3-0)
Special problems in English literature, beginnings to 1660.
- 982. *Seminar: Later English Literature***
Fall, Winter, Spring. 3(3-0)
Special problems in English literature, 1660-1900.
- 983. *Seminar: American Literature***
Fall, Winter, Spring. 3(3-0)
Special problems in American literature, beginnings to 1900.
- 984. *Seminar: Twentieth Century Literature***
Fall, Winter, Spring. 3(3-0)
Special problems in English and American literature, 1900 to the present.
- 985. *Seminar: Special Studies in Literary Form and Theory***
Fall, Winter, Spring. 3(3-0)
Forms, genres, and movements.
- 986. *Seminar: American Literature and Culture***
Fall, Winter, Spring. 3(3-0)
American literature in a cultural context, drawing upon popular and fine arts, the history of ideas, the history of social movements.
- 987. *Seminar: Special Topics in Comparative Literature***
Spring. 3(3-0) Advanced graduates. Interdepartmental with German and Russian, and the Department of Romance and Classical Languages. Administered by the Department of Romance and Classical Languages.
- 998. *Advanced Writing for Doctoral Candidates***
Fall, Winter, Spring, Summer. 3(3-0)
Admission to a doctoral program or approval of instructor.
Training for writing dissertations and publishing in the sciences, humanities, and other fields. Includes a detailed analysis of each student's style, methods of organizing, practice in editing, and individual conferences.
- 999. *Doctoral Dissertation Research***
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

ENTOMOLOGY

ENT

College of Agriculture and Natural Resources College of Natural Science

- 250. *Pesticides, Their Alternatives and Environmental Quality (N)***
Winter. 3(4-0)
Impact of agricultural pesticides on man and his environment. Emphasizes the effect of chemicals on food production and combating diseases and ecological imbalance. Presents pesticide alternatives for the future.
- 301. *General Entomology***
Fall, Spring. 3(3-0) BS 211 and BS 212 recommended.
Biological relationships of insects. Insect behavior, ecology, and classification. Metamorphosis and development of insects.
- 302. *General Entomology Laboratory***
Fall, Spring. 2(0-6) ENT 301 or concurrently.
Insect diversity with emphasis on morphology, development, classification, identification, bionomics, and evolution. Stresses reproductive strategies and general adaptability as relates to the overall ecological success of insects.
- 303. *Entomological Techniques***
Spring. 2(0-6) ENT 301 or approval of department; ENT 302 recommended but not required.
Field entomology, including collecting and rearing techniques and methods of specimen preparation and preservation. Practical experience in insect identification and bionomics. Collection required.