

ENGINEERING

EGR

College of Engineering

- 160. Engineering Communications**
Fall, Winter, Spring. 4(1-6) MTH
108 or 111 or concurrently.
Engineering graphics, a means used by engineers to communicate their ideas to others. Freehand sketching, descriptive geometry, and graphical, numerical and computer problem solutions.
- 161. Mechanical Drawing**
Fall, Winter, Spring. 2(0-4)
Lettering and use and care of instruments. Orthographic projection, working drawings, machine sketching and isometric drawing.
- 162. Mechanical Drawing**
Fall, Winter, Spring. 2(0-4) 160 or 161.
Continuation of 161 with emphasis on freehand lettering and sketching, advanced working drawings.
- 200. Technology and Society**
Winter. 3(3-0) One term of American thought and language.
An attempt to describe and analyze portions of current technology and its desired and undesired consequences; an exploration of avenues for assessing such consequences for future technologies.
- 260. Machine Drawing**
Fall, Winter, Spring. 3(0-6)
Advanced orthographic projection, detail, and assembly drawing, sections and conventions, tracings, illustration and other pictorial drawings of mechanical elements.
- 263. Structural Drawing**
Winter. 3(0-6) An engineering graphics course.
A comprehensive study of space planning relative to residential and light-commercial interiors. Building materials, fixtures, and mechanical equipment will be studied with respect towards application and installation.
- 267. Architectural Drafting I**
Fall, Winter, Spring. 3(0-6)
House construction detailing. Analysis and drawing of typical standard details.
- 268. Descriptive Geometry**
Fall. 3(2-2) 160, 161.
Problems involving relations of points, lines, and planes. Intersections, developments, coplanar, and noncoplanar vectors.
- 270. Computer Graphics**
Spring. 3(3-0) 160 or 161; CFS 110 or 120 or LBC 125; or approval of department.
Use of computer controlled display systems for the solution of multidimensional problems.
- 364. Architectural Drafting II**
Winter. 3(0-6) 267.
Functional and standard procedure in the layout of floor plans in traditional and modern houses. Rendered plot plan and required details.
- 365. House Planning**
Fall, Winter, Spring. 3(1-4)
Elementary house architecture. Drawing plans from sketches. Kitchen planning, house styles, elements of design, financing, heating, lighting.
- 366. Architectural Perspective Drawing**
Fall. 3(0-6) Any engineering graphics course.
One-point and two-point perspective, revolved

plan and measuring line methods. Pencil rendering, problems in shade and shadows. House model to scale, optional.

- 463. Architectural Drafting III**
Spring. 3(0-6) 364 or 365.
Traditional and modern elevations. One- and two-point rendered perspective. Functional plans drawn in 364 or 365 required.
- 480. Special Problems**
Fall, Winter, Spring, Summer. 1 to 4 credits. May re-enroll for a maximum of 8 credits. Approval of department.

ENGLISH

ENG

College of Arts and Letters

- 091. English for Foreign Students—Elementary**
Fall, Winter, Spring, Summer. Zero credit. (3(3-0) to 15(25-0))†. English language proficiency examination.
Spoken structures, pattern practice, reading, writing and laboratory in the English language for foreign students on the elementary level.
- 092A. English for Foreign Students—Low Intermediate**
(092.) Fall, Winter, Spring, Summer. Zero credit. (3(5-0) to 15(25-0))†. English language proficiency examination.
Spoken structures, pattern practice, reading, writing and laboratory in the English language for foreign students on the low-intermediate level.
- 092B. English for Foreign Students—High Intermediate**
(092.) Fall, Winter, Spring, Summer. Zero credit. (3(5-0) to 15(25-0))†. English language proficiency examination.
Spoken structures, pattern practice, reading, writing and laboratory in the English language for foreign students on the high-intermediate level.
- 093. English for Foreign Students—Advanced**
Fall, Winter, Spring, Summer. Zero credit. (3(5-0) to 15(25-0))†. English language proficiency examination.
Spoken structures, pattern practice, reading, writing and laboratory in the English language for foreign students on the advanced level.
- 094. English for Foreign Students—Supplementary**
Fall, Winter, Spring, Summer. Zero credit. (3(5-0) to 6(10-0))†. English language proficiency examination.
Composition in the English language for foreign students on the supplementary level.
- 101. Responses Through Writing**
Fall. 4(4-0) Arts and Letters Freshmen only.
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) Arts and Letters Freshmen only.
A writing workshop that develops the emphases of 101 and encourages students to write in more public and objective forms—narrative, critical analysis, and issue-oriented essays.
- 200H. Honors Work**
Fall, Winter, Spring. 1 to 16 credits. Approval of department.
†See page A-2 item 3
- 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)
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)
Required of majors and minors. 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)
Required of majors and minors. 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)
Required of majors and minors. 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 of the Study of Literature II**
Winter, Spring. 4(4-0) 210.
A continuation of 210.
- 213. Writing Workshop**
Fall, Winter, Spring, Summer. 3(3-0)
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.
- 214. Composition for Secondary English Teachers**
Fall, Winter, Spring. 4(3-1) 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.
- 228A. Fiction Writing**
Fall, Winter, Spring, Summer. 4(4-0)
206 and written approval of department.
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 department.
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) 208 and written approval of department.

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.

300A. Advanced Fiction Writing

(300.) Fall, Winter, Spring, Summer. 4(4-0) May re-enroll in 300A and/or 300B for a maximum of 12 credits. 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 on the basis of manuscripts submitted to him.

300B. Advanced Poetry Writing

(300.) Fall, Winter, Spring, Summer. 4(4-0) May re-enroll in 300A and/or 300B for a maximum of 12 credits. 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 on the basis of manuscripts submitted to him.

300C. Playwriting

Winter, Spring. 4(4-0) May re-enroll for a maximum of 8 credits. Approval of department.

Basic elements of playwriting: dramatic action, exposition, plotting, characterization, dialogue, mood, and visual effects. Class work will also include discussion of plays.

301. Literature and the Adolescent

Fall, Winter, Spring. 4(3-1) 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.

345. Classic Myths and Literature

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.

351. English Literature I

Fall. 4(4-0) English major or minor. Survey of English literature to Milton. Major representative writers and literary forms of the specified period.

352. English Literature II

Winter. 4(4-0) English major or minor.

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) English major or minor.

Survey of English literature, Blake to Hardy. Major representative writers and literary forms of the specified period.

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

Fall, Winter, Spring, Summer. 4(4-0) May re-enroll for a maximum of 12 credits.

A rich variety of perspectives on literature for majors and non-majors. Approach and content differs with each section.

400. Tutorial

Fall, Winter, Spring, Summer. 1 to 5 credits. May re-enroll 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.

401. Introduction to English Language Studies

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.

402. Modern English Grammar

Winter, Spring. 4(4-0) 401.

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) 402, 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) 402.

Applications of linguistic principles to teaching of English pronunciations, structure, and vocabulary to native speakers and to native speakers of other languages. Preparation of materials and discussion of techniques.

408. Problems in the Teaching of Reading and Writing

Fall, Winter, Spring. 4(3-1) 214, 301, ED 327D.

Problems in the teaching of reading and writing in the secondary schools. For prospective English teachers.

410. Chaucer

Fall, Winter, Spring, Summer. 4(4-0) Majors: 208; others: 6 credits of literature.

Chaucer's poetry, especially *The Canterbury Tales*. Read in Middle English.

411. Spenser

Winter. 4(4-0) Majors: 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: 208; others: 6 credits of literature.

Milton's prose and poetry, especially *Paradise Lost*.

421. Shakespeare

Fall, Winter, Spring, Summer. 4(4-0) Majors: 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) 421.

Advanced study of several representative plays exclusive of those taught in 421.

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.

426A. Comparative Drama

(C L 426; ENG 426.) Fall. 3(3-0) Majors: 208; others: 6 credits of literature.

Studies in the development of drama: classical and medieval.

426B. Comparative Drama

(C L 426; ENG 426.) Winter. 3(3-0) Majors: 208; others: 6 credits of literature.

Studies in the development of drama: Renaissance and seventeenth century.

426C. Comparative Drama

(C L 426; ENG 426.) Spring. 3(3-0) Majors: 208; others: 6 credits of literature.

Studies in the development of drama: neo-classical and romantic.

426D. Comparative Drama

(C L 426; ENG 426.) Fall, Spring. 3(3-0) Majors: 208; others: 6 credits of literature.

The development of drama: Ibsen to World War II.

426E. Comparative Drama

Spring, Summer. 3(3-0) Majors: 208; others: 6 credits of literature.

The development of drama: World War II to the present.

436. Comparative Fiction

(C L 436.) Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Majors: 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: 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: 208; others: 6 credits of literature.
Works of Taylor, Edwards, Franklin, Freneau and others.
- 442. American Literature: Early Romanticism**
Fall. 4(4-0) Majors: 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: 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: 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: 208; others: 6 credits of literature.
Works of Fitzgerald, Hemingway, Faulkner and others.
- 448. Twentieth Century American Poetry**
Fall, Spring, Summer. 4(4-0) Majors: 208; others: 6 credits of literature.
Works of Eliot, Pound, Frost and others.
- 449. Afro-American Literature I**
Fall, Winter, Summer. 4(4-0) Majors: 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.
- 450. Afro-American Literature II**
Winter, Spring, Summer. 4(4-0) Majors: 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.
- 452. Contemporary Literature**
Fall, Winter, Spring, Summer. 4(4-0) Majors: 208; others: 6 credits of literature.
Contemporary British or American fiction, drama or poetry.
- 455. Tudor Literature**
Fall. 4(4-0) Majors: 208; others: 6 credits of literature.
Poetry, prose and non-Shakespearian drama of the sixteenth century.
- 456. Early Seventeenth Century Literature**
Winter. 4(4-0) Majors: 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: 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: 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: 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: 208; others: 6 credits of literature.
Continuation of 465; Keats, Shelley, Byron.
- 467. Language and Culture**
Fall, Spring. 4(3-0) Approval of department. Interdepartmental with and administered by the Anthropology Department.
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.
- 470. Victorian Essayists**
Fall. Summer of even-numbered years. 4(4-0) Majors: 208; others: 6 credits of literature.
Selected readings from Carlyle, Newman, Arnold, Mill, Huxley and other essayists.
- 471. Victorian Poets**
Spring. 4(4-0) Majors: 208; others: 6 credits of literature.
Selected readings from Arnold, Browning, Tennyson and other poets.
- 476. Canadian-American Studies**
For course description, see Interdisciplinary Courses.
- 477. Comparative Epic**
(C L 466.) Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Majors: 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: 206, 207, 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: 206, 207, 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.
- 482. Practical Criticism**
Spring. 4(4-0) 480 or 481.
Literary criticism in response to a given work.
- 485. The English Novel Through the Eighteenth Century**
Fall, Summer. 4(4-0) Majors: 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**
(472.) Winter, Summer. 4(4-0) Majors: 208; others: 6 credits of literature.
Study of such writers as Scott, Dickens, Thackeray, Eliot, Hardy and others.
- 487. The Modern English Novel**
(438.) Spring, Summer. 4(4-0) Majors: 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 re-enroll for a maximum of 8 credits. To receive credit, both 491H and 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 491H and 492H.
- 492H. Studies in Period**
Winter. 4(4-0) May re-enroll for a maximum of 8 credits. To receive credit, both 491H and 492H must be completed satisfactorily. 491H and approval of the departmental honors adviser.
Continuation of 491H.
- 493H. Studies in Genre**
Winter. 4(4-0) May re-enroll for a maximum of 8 credits. To receive credit, both 493H and 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 re-enroll for a maximum of 8 credits. To receive credit both 493H and 494H must be completed satisfactorily. 493H and approval of the departmental honors adviser.
Continuation of 493H.
- 496H. Special Topics**
Fall, Winter, Spring. 4(4-0) May re-enroll 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 8 credits. May re-enroll for a maximum of 8 credits. Seniors and approval of departmental honors adviser.
A substantial piece of writing under the direction of selected faculty.
- 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.
- 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) 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

(C L 905, ENG 905.) Fall, Winter, Spring, Summer. 3(3-0) May re-enroll 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.

806. Medieval Languages

Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 15 credits. Gothic, Old Norse, and Old Irish.

810. Medieval Literature

Fall, Winter, Spring, Summer. 3(3-0) May re-enroll for a maximum of 6 credits. Chaucer and the literature of the fourteenth century.

811. Renaissance Literature

Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. English nondramatic literature, 1500-1600.

815. Restoration and Eighteenth Century Literature

Fall, Winter. 3(3-0) May re-enroll for a maximum of 6 credits. English literature, 1660-1798.

816. Nineteenth Century Literature

Fall, Winter, Spring, Summer. 3(3-0) May re-enroll for a maximum of 9 credits. English literature, 1798-1900.

821. Nineteenth Century American Literature

Fall, Winter, Spring, Summer. 3(3-0) May re-enroll for a maximum of 9 credits. American literature, 1820-1900.

824. Seventeenth Century Literature

Winter, Spring. 3(3-0) May re-enroll for a maximum of 6 credits. English nondramatic literature, 1600-1660, including Milton.

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) May re-enroll for a maximum of 6 credits. English and American literature, 1900 to the present, with attention to foreign backgrounds.

830. Major Writers of American Literature

Fall. 5(4-0) Major in English—Secondary School Teaching or approval of department. Franklin through Whitman.

831. Major Writers of American Literature

Winter. 5(4-0) Major in English—Secondary School Teaching or approval of department. Twain to the present.

840. Writing Workshop for Teachers

Fall, Spring, Summer. 5(5-0) Major in English—Secondary School Teaching or approval of department.

Emphasis on personal and public modes of writing; some discussion of methods of teaching writing; class discussion and evaluation of student writing; individual conferences.

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 845.

855. Shakespeare

Fall, Spring. 3(3-0) Intensive study of selected plays.

862. Approaches to Literature

Winter. 5(4-0) Major in English—Secondary School Teaching or approval of department.

Literature through thematic, genre and historical approaches.

871. Methods of Literary Research

Fall, Spring, Summer. 3(3-0) Bibliography and use of library: preparation of reports, reviews, and scholarly papers.

880. Proseminar for Master's Degree Candidates

Fall, Winter, Spring, Summer. 3(3-0) Individual scholarly work under guidance.

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) 885. Continuation of 885.

895. College Teaching of English

Fall, Winter, Spring. 1 to 3 credits. May re-enroll for a maximum of 3 credits. Graduate teaching assistant. Supervised teaching of college classes in English language and literature.

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. Research

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

902. Studies in Form and Genre

Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. 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. Studies in Periodization

(C L 903.) Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Analyses of the manner in which various genres, conventions and continuing traditions of litera-

ture 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) May re-enroll for a maximum of 9 credits.

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 odd-numbered years. Winter and Spring of even-numbered years. 3(3-0) May re-enroll for a maximum of 9 credits.

Liturgical beginnings to 1642, excluding Shakespeare.

940. Studies in Shakespeare

Winter of odd-numbered years. 3(3-0) To receive credit, both 940 and 941 must be completed satisfactorily.

941. Studies in Shakespeare

Spring of odd-numbered years. 3(3-0) To receive credit, both 940 and 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.

972. Rationale of Literary Research

Spring. 3(3-0) Candidacy for the Ph.D. degree. Principles and methods of research in literary problems.

980. Studies in English Language

Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. 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) May re-enroll for a maximum of 9 credits. Special problems in English literature, beginnings to 1660.

982. Seminar: Later English Literature

Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Special problems in English literature, 1660-1900.

983. Seminar: American Literature

Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Special problems in American literature, beginnings to 1900.

984. Seminar: Twentieth Century Literature

Winter, Spring. 3(3-0) May re-enroll for a maximum of 6 credits. 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) May re-enroll for a maximum of 9 credits. Forms, genres, and movements.

986. American Literature and Culture
Fall, Winter. 3(3-0)

American Literature in a cultural context, drawing upon popular and fine arts, the history of ideas, the history of social movements.

999. Research

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

ENTOMOLOGY **ENT**

College of Natural Science

250. Pesticides and Environmental Quality

Winter. 3(3-0)

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) F S 211 and 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) 301 or concurrently.

Experiments in morphology, physiology, behavior of insects. Populations and classification of major groups.

337. Forest and Shade Tree Entomology

Fall. 4(3-2) Three terms of Natural Science.

Provides an understanding of significance and nature of insect injury to forest and shade trees, based upon morphology, physiology, biology and taxonomy of insect and host. Analyzes biological, chemical, cultural and silvicultural approaches to insect control in order to equip student with competence to carry out survey and action program assignments.

401. Problems

Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of department.

Advanced individual work on a field or laboratory research problem or a study of published literature on a selected topic.

404. Field Entomology

Summer. 6 credits. One year of zoological science or teaching major in general science or approval of department. Given at W. K. Kellogg Biological Station.

Basic field survey in entomology. Emphasis on the biology, collection and identification of insects common to the Gull Lake Biological Station area.

410. Apiculture and Pollination

Spring. 3(2-2)

Biology of the honey bee and some of the wild bees. Relationships between bees and flowering plants. Value of bees in crop pollination. Introduction to management with visits to the University apiary.

411. Seminar

Fall, Winter. 1(1-0) Majors or approval of department.

Reports by students, faculty, and representatives of the profession, with emphasis on current problems not covered in regular college subjects.

418. Systematic Entomology

Winter. 4(1-9) 301, 302.

General taxonomic course to acquaint the student with the various groups of insects.

420. Aquatic Insects

Fall. 4(2-4) 301, 302.

Biology, ecology and systematics of aquatic insects.

421. Stream Ecology

Summer. 3 credits. 420 or approval of department. Given at W. K. Kellogg Biological Station.

An in-depth examination of stream ecosystems—physical, chemical and biological aspects. Field work will be centered on local streams. Laboratory exercises will involve manipulations necessary for the determination of population energy budgets, with special emphasis on aquatic insects.

430. Economic Entomology

Winter. 3(2-3) 301, 302.

Recognition, life histories, behavior, ecology and integrated control of insects of economic importance.

438. Taxonomy of Immature Insects

Spring of even-numbered years. 4(1-9)

418.

Identification of immature insects with particular emphasis on the Holometabola.

440. External Morphology of Insects

Fall. 4(2-6) 301, 302, or approval of department.

Morphological concepts of external skeletal parts of insects. Emphasis on evolutionary development of structures from the Apterygota through the Pterygota.

441. Internal Morphology

Winter. 4(2-6) 440 or approval of department.

Morphology of the internal structure of insects. Emphasis on the evolutionary development of organs and organ systems of various representative insects.

450. Insect Physiology

Winter. 4(3-3) 441; PSL 401; 1 year of chemistry or approval of department.

Comparative physiology of insects with histological and functional aspects of organs and organ systems.

460. Medical Entomology

Winter. 4(3-3) 301, 302, or approval of department.

Distribution and biology of important arthropod vectors of diseases to man, disease symptoms, life cycle of the infectious agent, reservoirs, urticating arthropods, anaphylactic reactions, myiasis, and prophylactic measures.

470. Introductory Nematology

Winter of odd-numbered years. 3(2-3) Interdepartmental with the Department of Botany and Plant Pathology.

Biology, taxonomy and control of plant parasitic and saprophytic nematodes.

480. Insects in Relation to Plant Diseases

(860.) Winter of even-numbered years. 4(2-4) 302. Interdepartmental with the Department of Botany and Plant Pathology.

Relationships of insects, mites and nematodes to important plant diseases incited by bacteria, fungi, viruses and toxins. Mode of transmission and means of control. Transmission techniques and important plant-pathogen-insect relationships.

490. Topics in Entomology

(870.) Fall, Winter, Spring, Summer.

Variable credit. Majors or approval of department.

Advanced work in medical entomology, acarology, advanced forest entomology, soil arthropods, behavior and biological control.

808. Advanced Taxonomy

Fall, Winter, Spring. 4(0-12) May re-enroll for a maximum of 24 credits. 418, 440.

Classification in depth of a single order of insects, including comparative morphology of the group and survey of recent and classical literature.

811. Ecology of Aquatic Insects

Summer of every third year; given in 1969. 3 credits. 420 or approval of department. Given at W. K. Kellogg Biological Station.

Aquatic insects, their physiology, distribution, and density. Preparation of energy budgets for natural populations.

820. Insect Ecology

Winter of odd-numbered years. 3(2-3) Approval of department.

Insects and various invertebrates in relation to their environment. Factors affecting populations, speciation and distribution. Application of basic ecological principles to integrated control measures.

821. Advanced Stream Ecology

Summer. 3 credits. 421 or approval of instructor. Given at W. K. Kellogg Biological Station. Interdepartmental with Fisheries and Wildlife Department.

Stream ecosystem energy budget models with emphasis on individual projects involving both laboratory and field experiments. Particular use will be made of artificial streams and locally abundant species of aquatic insects.

830. Insect Biochemistry

Spring of even-numbered years 4(4-0). 450; BCH 401.

Energy metabolism, intermediary metabolism and the biochemistry of development in insects; stresses biochemical differences between insects and higher animals.

831. Insect Biochemistry Laboratory

Summer of even-numbered years. 2(0-6) 830 or concurrently.

Laboratory to accompany 830. Experiments designed to elucidate the biochemical mechanisms of importance to insects.

838. Principles of Taxonomy

Spring of odd-numbered years. 3(3-0) Twenty credits in zoology and/or entomology, or approval of department.

Methods and principles of systematic zoology and entomology, including a historical survey of the pre-Linnaean and post-Linnaean systems of classification. International rules of zoological nomenclature and their emendations.

840. Insect Toxicology

Winter of odd-numbered years. 5(3-6) 301, 302; organic chemistry.

Chemical and physical properties of insecticides, relationship of chemical structure to mode of action, and physiological basis of toxicological action.

881. Biology of the Arthropoda

Winter. 5(3-6) ZOL 481 or approval of department. Interdepartmental with and administered by the Zoology Department.

Ecology, life cycles, morphology, taxonomy, and distribution of arthropods other than insects.

899. Research

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