EGR

College of Engineering

160. Engineering Communications
Fall, Winter, Spring. 4(1-6) MTH
108 or 111 or concurrently.

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) or 160 or 161.
Continuation of 161 with emphasis on freehand lettering and sketching, advanced working drawings.

260. Mechanical Drawing
Fall, Spring. 3(0-6)
Advanced orthographic projection, detail, and assembly drawing, sections and conventions, tracings, illustration, and pictorial drawings of mechanical elements.

263. Structural Draughting
Winter. 3(0-6) 160.
Structural steel, reinforced concrete, masonry, and timber detail drawings. Highway drawings and mapping.

265. Architectural Drafting I
Fall, Winter, Spring. 3(0-6)
House construction detailing. Analysis and drawing of typical standard details.

266. 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) CFS 110 or 120 or LBC 125; EGR 160 or 161; 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
Fall. 2(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.

ENG

College of Arts and Letters

091. English for Foreign Students—Elementary
Fall, Winter, Spring, Summer. Zero credit. (3-5-0) to 15(25-9)l. English language proficiency examination.
Grammar, conversation, composition, pronunciation and laboratory in the English language for foreign students on the elementary level.

092. English for Foreign Students—Intermediate
Fall, Winter, Spring, Summer. Zero credit. (3-5-0) to 15(25-9)l. English language proficiency examination.
Grammar, conversation, composition, pronunciation and laboratory in the English language for foreign students on the intermediate level.

093. English for Foreign Students—Advanced
Fall, Winter, Spring, Summer. Zero credit. (3-5-0) to 15(25-9)l. English language proficiency examination.
Grammar, conversation, composition, pronunciation 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)l. English language proficiency examination.
Composition and pronunciation in the English language for foreign students in need of supplementary work only.

101. Freshman Composition I
Fall, Winter, Spring. 4(3-1)
Practice in writing expository prose.

102. Freshman Composition II
Fall, Winter, Spring. 3(3-2)
Continuation of 101.

200H. Honors Work
Fall, Winter, Spring. 1 to 16 credits.
Approval of department.

201. Nature of Language
Fall, Winter, Spring, Summer. 3(3-0)
ATL 113.
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) ATL 113.
A study of selected plays illustrating the powers of England's greatest writer.

206. Forms of Literature
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
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
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.

213. Expository Writing
Fall, Winter, Spring. 3(3-0) ATL 113.
Practice in informative writing to develop mastery of a clear, accurate style and of practical, basic expository forms.

214. Composition for Secondary English Teachers
Fall, Winter. 4(3-1) ATL 113.
Writing practice in various modes such as personal narrative and description, the familiar essay, and the writing of literary and nonliterary expository forms. Discussion of the process of composing and the teaching of oral and written composition in junior and senior high schools.

225A. Fiction Writing
Fall, Winter, Spring, Summer. 4(4-0)
Fiction writing and creative writing. The writing of short fiction. Classes and individual conferences. Approval to enroll requires a conference with the instructor.

225B. 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.

228A. Fiction Writing
Fall, Winter, Spring, Summer. 4(4-0)
Fiction writing and creative writing. The writing of short fiction. Classes and individual conferences. Approval to enroll requires a conference with the instructor.

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.

300A. Advanced Fiction Writing
Fall, Winter, Spring. 4(4-0) May re-enroll in 300A and/or 300B for a maximum of 15 credits. 225A and written approval of the 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
Fall, Winter, Spring. 4(4-0) May re-enroll in 300A and/or 300B for a maximum of 15 credits. 229 and written approval of the 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.

301. Literature and the Adolescent
Fall, Winter, Spring. 4(3-1) 208.
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(0-3) ATL 113.
Greek myths that have been woven into later poetry, fiction, drama, painting, sculpture, and music.

350. **Masterpieces of American Literature**
Fall, Winter, Spring. Summer. 3(0-3) ATL 113. Not applicable to major or minor requirements.
Selected masterpieces of American literature.

351. **Masterpieces of English Literature**
Fall, Winter, Spring, Summer. 3(0-3) ATL 113. Not applicable to major or minor requirements.
Selected masterpieces of English literature.

382. **Masterpieces of Contemporary Literature**
Spring. 3(0-3) Not applicable to major or minor requirements.
Selected masterpieces of contemporary literature.

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 an individually supervised study of a phase of literary history.

402. **Modern English Grammar**
Fall, Winter, Spring. 4(4-0) ATL 113. Descriptive, structural and transformational analysis of present-day American English in light of current linguistic theory and practice; phonetics, phonemics, morphemics, syntax, and dialects; applications to teaching.

403. **The Development of Modern English**
Winter. Summer of even-numbered years. 4(4-0) ATL 113. Historical development of the language; native and foreign elements; changes in inflections, pronunciation, vocabulary, meaning.

404. **American English**
Fall, Winter, Spring. 4(4-0) ATL 113. 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 pronunciation, structure, and vocabulary to native speakers and to native speakers of other languages. Preparation of materials and discussion of techniques.

410. **Chaucer**
Fall, Winter, Spring. 4(4-0) Majors: 208; others: 6 credits of literature. Chaucer's poetry, especially The Canterbury Tales.

411. **Spenser**
Winter. 4(4-0) Majors: 208; others: 6 credits of literature. Emphasis on The Faerie Queene.

412. **Milton**
Fall, Winter, Spring. 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. 4(4-0) 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 based on the basis of manuscripts submitted to him. Prior course work in writing will normally be expected.

426. **Comparative Drama**
(C L 426.) Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 12 credits. Majors: 208; others: 6 credits of literature. Studies in the development of the drama in three courses, as follows: classical and medieval; Renaissance and seventeenth century, neo-clas­sic­al and romantic; and the drama from Ibsen 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. Studies in the development of narration and fiction in three courses, as follows: forerunners of the novel and eighteenth century romance fiction; origins of realism, naturalism, expressionism, symbolism, the psychoanalytic novel, and other experimental forms in nineteenth-century fiction; and continuation of these forms in twentieth-century fiction.

442. **American Literature: Early Romanticism**
Fall, Winter, Spring. 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. 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. 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, and others.

447. **Twentieth Century American Fiction**
Fall, Winter, Spring. 4(4-0) Majors: 208; others: 6 credits of literature. Works of Fitzgerald, Hemingway, Faulkner and others.

455. **Tudor Literature**
Fall. 4(4-0) Majors: 208; others: 6 credits of literature. Poetry, prose and non-Shakespearian drama of the eighteenth 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, 1660-1714; Dryden, Pope, Swift, and others.

462. **The Age of Johnson**
Spring. 4(4-0) Majors: 208; others: 6 credits of literature. Literature of the eighteenth century to 1785; Johnson and his circle, the novelists and others.

465. **The English Romantic Period**
Fall, Spring. 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. 3(0-3) Approval of department. Interdepartmental work and administration 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, Hazlitt 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.1, 468.) 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
(458.) 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. 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.

500. History of the English Language
Spring, Summer. 3 credits.

501. Old English
Fall, Summer. 3 credits.
Phonology and morphology of English before 1100.

502. Beowulf
Winter. 3 credits.

503. Old English Poetry
Spring. 3(3-0) 402.
Studies in Old English poetic literature; selections from the poetry of the Exeter Book or other work exclusive of Beowulf.

504. Middle English
Winter. 3(3-0)
Linguistic study of English writings, 1100-1400.

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

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

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

515. Restoration and Eighteenth Century Literature
Fall, Winter. 3(3-0) May re-enroll for a maximum of 6 credits.
English literature, 1660-1798.

516. Nineteenth Century Literature
Fall, Winter, Spring, Summer. 3(3-0) May re-enroll for a maximum of 9 credits.
English literature, 1898-1900.

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

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

525. Colonial and Revolutionary American Literature
Winter. 3(3-0)
American literature, from the beginnings to 1820.

529. 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.

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

531. Major Writers of American Literature
Winter. 5(4-0) Major in English—Secondary School Teaching or approval of department.
Tweed to the present.

540. Advanced Writing
Spring. 5(4-0) Major in English—Secondary School Teaching or approval of department.
Expository and creative writing.

545. 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.

546. Approaches to Language
Winter. 3(3-0) Major in English—Secondary School Teaching or approval of department.
Continuation of 545.

550. Major Writers of English Literature
Spring. 5(4-0) Major in English—Secondary School Teaching or approval of department.
Chaucer through Milton.

551. Major Writers of English Literature
Summer. 5(4-0) Major in English—Secondary School Teaching or approval of department.
Dryden through Keats.

582. Major Writers of English Literature
Summer. 5(4-0) Major in English—Secondary School Teaching or approval of department.
Tennyson to the present.
855. Shakespeare
Fall, Winter. 4(4-0). Major in English—Secondary School Teaching or approval of department.
Intensive study of selected plays.

861. Library Methods—Secondary Schools
Spring. 3(3-0). Major in English—Secondary School Teaching or approval of department.
Uses of the library; book selection and ordering.

862. Approaches to Literature—Secondary Schools
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. 3(3-0)
Individual scholarly work under guidance.

885. College Teaching of English
Fall, Winter, Spring. 3(3-0)
Supervised teaching of college classes in 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 interrelations of individual and collective forms and genres of literature 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.
Analyzes 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) 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.

905. Studies in Comparative Drama
(C L 905) Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Approval of department.
Comparative study of selected playwrights, movements, trends and developments in world drama from the beginnings to the present day.

930. Studies in English Drama
Fall of even-numbered years. Winter and Spring of odd-numbered years. 3(3-0) May re-enroll for a maximum of 9 credits.
Litereal 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. 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.

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, beginning to 1600.

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, 1600-1900.

983. Seminar: American Literature
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits.
Special problems in American literature, beginning 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, genre, and movement.

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

ENTOMOLOGY

College of Natural Science

301. General Entomology
Fall, Spring. 3(3-0) B S 211 and 212 recommended.

302. General Entomology Laboratory
Fall, Spring. 2(2-0). 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). N S 193.
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 in a study of published literature on a selected topic.

404. Field Entomology
Spring. 3(3-0)
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(3-0)
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. 3(3-0) May 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(3-0). 301, 302.
General taxonomic course to acquaint the student with the various groups of insects.

420. Aquatic Insects
Fall. 4(2-4). 301, 302.
Biological ecology and systematics of aquatic insects.

430. Economic Entomology
(300) 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(1-0)
Identification of immature insects with particular emphasis on the Holometabola.

440. External Morphology of Insects
Fall. 4(2-0). 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(2-0). 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.