3940. Fluid Mechanics Applications. 3 hours. (2:2) Study of incompressible fluid mechanics, including pressure, force and velocity; hydraulic fluid power circuits and systems as used in industrial applications. Prerequisite(s): ENGR 2302 and MATH 1720.

3990. Applied Thermodynamics. 3 hours. Principles of energy balance and substance behavior as related to different engineering systems. Topics include gas laws, laws of thermodynamics, relationship between thermodynamics variables, thermodynamic tables and charts, power cycle and various applications. Prerequisite(s): CHEM 1410/1430, MATH 1720 and PHYS 1710/1730.

4050. Mechanical Design. 3 hours. (2:3) Elements, principles and graphic representation techniques of the design process. Design methodology and process in applied engineering design. Design problem identification, refinement and analysis in the development of machines. Prerequisite(s): senior standing and completion of all 3000-level engineering technology courses. Prerequisite(s): MEET 3650.

4350. Heat Transfer Applications. 3 hours. Principles of energy transfer by heat; conduction, free and forced convection, radiation, condensation and boiling heat transfer; combined heat transfer; introduction to heat exchanger; simple numerical techniques and computer applications. Prerequisite(s): MEET 3940, CHEM 1410/1430, MATH 1720 and PHYS 1710/1730.

4360. Experimental Thermal Sciences. 2 hours. (1:3) Designing and conducting experiments in fluid mechanics, hydraulics, thermodynamics and heat transfer. Prerequisite(s): for MFET students, MEET 3660; for MEET students, MEET 3940, 3990 and 4350 or concurrent enrollment.

4780. Senior Design I. 2 hours. Project teams specify, plan and design a product or process. Written documentation required. Projects to be supplied by local industry whenever possible. Prerequisite(s): MFET 4210 and senior standing.

4790. Senior Design II. 2 hours. (1:3) Implement, test and demonstrate a product or process. Oral and written documentation required. Projects to be supplied by local industry whenever possible. Prerequisite(s): MEET 4780 and MFET 4200.

4900-4910. Special Problems. 1–4 hours each.

4920. Cooperative Education. 1 hour. Supervised industrial internship requiring a minimum of 150 hours of work experience. Prerequisite(s): consent of department.

### Nuclear Engineering Technology, NUET

**2900. Special Problems.** 1–4 hours.

**3910. Principles of Nuclear Technology.** 3 hours. Introduction to nuclear technology and radiation physics; includes sources of radiation, its interaction with matter, and radiation detection and measurement. Prerequisite(s): MATH 1720 and PHYS 2220.

**3920. Nuclear Instrumentation and Measurement.** 4 hours. (3:2) Measurement of radioactive materials commonly encountered in commercial nuclear facilities; includes engineering and scientific principles, measurement techniques and data analysis. Prerequisite(s): NUET 3910.

**3930. Radiation Biology and Safety.** 4 hours. (3:2) The interaction of radioactive sources and living organisms; effects of both long- and short-term exposure to radiation; ionizing radiation, detection, measurement, shielding, exposure limiting, radiation handling and disposal. Prerequisite(s): NUET 3910.

**3950. Nuclear Reactor Theory.** 3 hours. A study of neutron transport theory and neutron diffusion mechanics as applied to nuclear fission and reactor core’s criticality analysis and behavior. Multi-region core configurations and group diffusion theory included. Prerequisite(s): MATH 1720 and PHYS 3010/3030.

**4780. Senior Design I.** 2 hours. Project teams specify, plan and design a product or process. Written documentation required. Projects to be supplied by local industry whenever possible. Prerequisite(s): NUET 3930 and 4050.

**4790. Senior Design II.** 2 hours. (1:3) Implement, test, and demonstrate a product or process. Oral and written documentation required. Projects to be supplied by local industry whenever possible. Prerequisite(s): NUET 4780.

**4850. Computational Methods for Nuclear Engineering Technology.** 4 hours. (3:3) Computer design and analysis for nuclear reactors and shielding. Methodology and theory for codes representative of cross section preparation, criticality calculation, gamma ray shielding and dose estimation from air scattered radiation. Prerequisite(s): NUET 3930, CSCE 1020 or consent of department.

**4880. Health Physics and Radiation Protection.** 3 hours. (2:3) Study and analysis of current health physics issues, practices and implementation. Radiation protection guides for both external and internal exposure and the methodology for establishing guidelines are explored. Methods of evaluation of effectiveness, environmental sampling and protection methods for monitoring radiation are introduced. Prerequisite(s): PHYS 1710/1730; MATH 1720, or consent of department.

**4900-4910. Special Problems.** 1–4 hours each.

**4920. Cooperative Education.** 1 hour. Supervised industrial internship requiring a minimum of 150 hours of work experience. Prerequisite(s): consent of department.

**4930. Reactor Engineering Design and Operation.** 4 hours. (3:2) Theory and practice of commercial nuclear reactor operation; includes neutron distribution in space and energy, design of conduction and convective heat transfer systems, and the design of reactor shielding. Prerequisite(s): NUET 3920 and 4050.

**4970. Modern Power Plant Design and Operation.** 3 hours. Study and analysis of modern power plant engineering and technology including fossil and nuclear fueled. Heat generated mechanical and electrical power operations with alternative energy resources. Prerequisite(s): MATH 1710/1720, and MEET 3990 or consent of department.

### English

**English, ENGL**

The prerequisites to sophomore-level English are 3 semester hours of freshman-level English or equivalent credit. A student may enroll for sophomore-level English concurrently with the second term/semester of freshman-level English.

ENGL 2210 or ENGL 2220 will satisfy the university’s humanities requirement. Students may take any literature course at the 2000, 3000, or 4000 level to satisfy the literature requirement of the College of Arts and Sciences Core. The same course may not be used to satisfy both requirements. ENGL 2700 may be substituted for ENGL 1320 in some majors. Students should consult advisers in their majors.

**1200. Developmental Writing.** 3 hours. Covers sentence formation and skills needed for argumentation and exposition within introduction, body and conclusion. Emphasizes audience, purpose and occasion. Does not apply to degree. Pass/no pass only.
1310-1320. Freshman English.

**1310 (ENGL 1301). College Writing I.** 3 hours. Writing as a means of ordering and shaping experience, information and ideas. Emphasis on perfecting texts through several drafts.

**1320 (ENGL 1302). College Writing II.** 3 hours. Continuation of ENGL 1310. Writing in response to reading and research. Emphasis on perfecting texts through several drafts. Prerequisite(s): ENGL 1310 or equivalent.

1311-1321. Honors Composition I and II.

**1311. Honors Composition I.** 3 hours. A process-oriented writing intensive course that provides students with the opportunity to write in response to their own experience, outside readings, and special topics selected by the instructor. Prerequisite(s): acceptance to Honors College. May be substituted for ENGL 1310.

**1321. Honors Composition II.** 3 hours. Continuation of ENGL 1311. A process-oriented writing intensive course that provides students with the opportunity to write in response to their own experience, outside readings, and special topics selected by the instructor. Prerequisite(s): acceptance to Honors College. May be substituted for ENGL 1320.

1312-1322. English Composition for International Students.

**1312. Grammar and Composition for International Students.** 3 hours. A linguistic synopsis of the essentials of English grammar in conjunction with the study and production of effective written and oral composition. May be substituted for ENGL 1310 by international students only.

**1322. Composition and Rhetoric for International Students.** 3 hours. Continuation of ENGL 1312. Course focuses on both the analysis and the production of expository writing as well as increased facility with the English language. Prerequisite(s): ENGL 1312 or equivalent. May be substituted for ENGL 1320 by international students only.

1313. Computer Assisted College Writing I. 3 hours. Writing as a means of critical thinking, with emphasis on the process of perfecting the essay through the writing of several drafts in the English computer classroom. No computer experience required. May be substituted for ENGL 1310.

1315-1325. Writing About Literature I and II.

**1315. Writing About Literature I.** 3 hours. Writing as a means of critical thinking using readings from poetry and drama as sources for essay topics. Emphasis on the process of perfecting the essay through the writing of several drafts. May be substituted for ENGL 1310.

**1325. Writing About Literature II.** 3 hours. Study of the relationship between writing and research with research topics drawn from readings from prose fiction. Emphasis on the process of perfecting the essay through the writing of several drafts. Prerequisite(s): ENGL 1315 or equivalent. May be substituted for ENGL 1320.

1323. Computer Assisted College Writing II. 3 hours. Continuation of ENGL 1313. Study of the relationship between writing and research. Emphasis on the process of perfecting the essay through the writing of several drafts in the freshman computer laboratory. Prerequisite(s): ENGL 1313 or equivalent. May be substituted for ENGL 1320.

2210-2220. World Literature.

**2210 (ENGL 2332). Masterpieces of world literature from the Ancients Through the Early Renaissance.** 3 hours. Prerequisite(s): three semester hours of freshman-level English or equivalent credit. Satisfies the Humanities requirement of the University Core Curriculum.

**2220 (ENGL 2333). Masterpieces of world literature since the Renaissance.** 3 hours. Prerequisite(s): three semester hours of freshman-level English or equivalent credit. Satisfies the Humanities requirement of the University Core Curriculum.

2211-2221. Honors World Literature.

**2211. Masterpieces of world literature from the Ancients Through the Early Renaissance.** 3 hours. Prerequisite(s): acceptance to Honors College. Satisfies the Humanities requirement of the University Core Curriculum.

**2221. Survey of world literature since the Renaissance.** 3 hours. Prerequisite(s): acceptance to Honors College. Satisfies the Humanities requirement of the University Core Curriculum.

2322 (ENGL 2322). British Literature to 1780. 3 hours. Masterpieces of British literature from Beowulf through the Enlightenment. Prerequisite(s): 3 semester hours of freshman-level English or equivalent credit. Satisfies the Humanities requirement of the University Core Curriculum.

2323 (ENGL 2323). British Literature 1780 to Present. 3 hours. Masterpieces of British literature from the Romantic Period to present. Prerequisite(s): 3 semester hours of freshman-level English or equivalent credit. Satisfies the Humanities requirement of the University Core Curriculum.

2327 (ENGL 2327). American Literature to 1870. 3 hours. Masterpieces of American literature from the Colonial Period through the Romantic Period. Prerequisite(s): 3 semester hours of freshman-level English or equivalent credit. Satisfies the Humanities requirement of the University Core Curriculum.

2328 (ENGL 2328). American Literature from 1870 to Present. 3 hours. Masterpieces of American literature from the Realistic Period through the present. Prerequisite(s): 3 semester hours of freshman-level English or equivalent. Satisfies the Humanities requirement of the University Core Curriculum.

2352-2362. Representative Readings in Literature for International Students.

**2352. Readings in the short story and novel, especially modern American literature and culture.** 3 hours. May be substituted for ENGL 2210 by international students only. Prerequisite(s): ENGL 1322 or equivalent. Satisfies the Humanities requirement of the University Core Curriculum.

**2362. Readings in poetry and drama, especially modern American works.** 3 hours. May be substituted for ENGL 2220 by international students only. Prerequisite(s): ENGL 1322 or equivalent. Satisfies the Humanities requirement of the University Core Curriculum.

2700 (ENGL 2311). Technical Writing. 3 hours. Expository writing, especially for science, pre-engineering and business students. May be substituted for ENGL 1320 in some programs; students should consult advisers in their majors.

2702. Technical Writing for International Students. 3 hours. Expository writing, especially for science, pre-engineering and business students. May be substituted for ENGL 1320 in some programs by international students only; students should consult advisers in their major. Prerequisite(s): 9 hours of freshman and sophomore English or the equivalent.
3000. Introduction to Literary Analysis and Interpretation Skills. 3 hours. Prepares students to understand literature and to articulate their understanding in essays supported by carefully analyzed evidence from assigned works. Major genres of poetry, drama, prose fiction and nonfiction, and the literary terms and conventions associated with each genre. Students learn to evaluate multiple interpretations of a text. Prerequisite for admission to the English degree program. Prerequisite(s): 6 hours of freshman composition and 6 hours of sophomore literature. Must be taken in the first 18 hours of English course work. Pre-majors in English (PENG) only.

3100. Introduction to Creative Writing. 3 hours. Processes and techniques of imaginative writing, both poetry and prose fiction.

3140. Intermediate Creative Writing: Fiction. 3 hours. Principles and practices in the writing of fiction.

3150. Intermediate Creative Writing: Poetry. 3 hours. Principles and practices in the writing of poetry.

3160. Intermediate Creative Writing: Non-fiction. 3 hours. Principles and practices in the writing of non-fiction.

3360. Survey of Classical Literature. 3 hours. A survey of Greek and Roman literature with emphasis on the mythology of the Classical Age.

3430. Studies in British Literature to 1780. 3 hours. In-depth study of traditional early British literature in any of the major periods, such as Anglo-Saxon poetry, Renaissance literature, Restoration and Augustan literature. Course may be repeated as topics vary for a maximum of 6 hours, but only 3 hours can apply to the English major requirements.

3440. Studies in British Literature 1780 to the Present. 3 hours. In-depth study of traditional later British literature in any of the major periods, such as Romantic literature, Victorian literature, modern and contemporary literature. Course may be repeated as topics vary for a maximum of 6 hours, but only 3 hours can apply to the English major requirements.

3450. Short Story. 3 hours. Comparative survey of the short story from its inception in the 19th century to the present day, comprising representative works by African, Asian, British, Russian, North and South American, and European writers, in English or in translation. Satisfies the Cross-Cultural, Diversity and Global Studies requirement of the University Core Curriculum.

3830. Studies in American Literature to 1870. 3 hours. In-depth study of traditional early American literature in any of the major periods, such as Colonial literature, Revolutionary and early National literature, and Romantic literature. Course may be repeated as topics vary for a maximum of 6 hours, but only 3 hours can apply to the English major requirements.

3840. Studies in American Literature 1870 to the Present. 3 hours. In-depth study of traditional later American literature in any of the major periods, such as realism, naturalism, Modern literature and Contemporary literature. Course may be repeated as topics vary for a maximum of 6 hours, but only 3 hours can apply to the English major requirements.

3850. The Literature of Texas and the Southwest. 3 hours. Study of the poetry, prose and drama of Texas and the Southwest and their relation to the cultural history of the region.

3910. Special Studies in Literature. 1–3 hours. Selected major authors, significant literary periods, thematically related literary works or topics of interest. May be repeated for credit as topics vary.

3911. Topics in British Literature. 3 hours. Consideration of genres, themes, movements, authors and their relationship to the cultural contexts of the age.

3912. Topics in American Literature. 3 hours. Consideration of genres, themes, movements, authors and their relationship to the cultural contexts of the age.

3913. Topics in World Literature. 3 hours. Consideration of genres, themes, movements, authors and their relationship to the cultural contexts of the age.

3920. Survey of Ethnic Literatures. 3 hours. Study of the literatures of several ethnic communities, including, but not limited to, African-American, Chicano (Mexican-American), Latino, Native American and Jewish-American. Comparison of divergent worldviews and ideologies articulated in ethnic literatures. Satisfies the Cross-Cultural, Diversity and Global Studies requirement of the University Core Curriculum.

3921. African-American Literature. 3 hours. Study of the cultural and historical specificity of African-American literature. Comparison of that literature to canonical texts and trends, or examination of that literature as a counter discourse to dominant theories.

3922. Chicano Literature. 3 hours. Study of the cultural and historical specificity of Mexican-American literature. Comparison of that literature to canonical texts and trends, or examination of that literature as a counter discourse to dominant theories.

3923. American Jewish Writers. 3 hours. Study of the cultural and historical specificity of American Jewish literature. Comparison of that literature to canonical texts and trends, or examination of that literature as a counter discourse to dominant theories. May be used to fulfill a requirement for the Jewish studies minor.

3924. Women's Literature. 3 hours. Studies in literature written by or about women. May be repeated for credit as topics vary. (Same as WMST 3720.)

4100. Advanced Fiction Writing. 3 hours. Advanced study and practice of fiction writing in a workshop setting. Prerequisite(s): ENGL 3140, or consent of department.

4110. Advanced Poetry Writing. 3 hours. Advanced study and practice of poetry writing in a workshop setting. Prerequisite(s): ENGL 3150 or consent of department.

4120 Advanced Creative Writing: Non-fiction. 3 hours. Advanced study and practice of non-fiction writing in a workshop setting. Prerequisite(s): ENGL 3160 or consent of department.

4150. Literary Criticism. 3 hours. Principles based on representative readings from major critics; essays and class exercises in forming independent critical judgment.

4160. Advanced Expository Writing. 1–3 hours. Tutorial course in logical and rhetorical principles; practice in writing effective exposition; analyzing and criticizing models.

4170. Principles and Practices of Rhetoric. 3 hours. A study of the major rhetoricians from Aristotle to Kenneth Burke, organized on a historical basis; emphasis on uses of rhetorical techniques in student writing.

4180. Advanced Technical Writing. 3 hours. Practical application of technical-writing theory and style in industry, business and the sciences. Prerequisite(s): ENGL 2700 is recommended.
4190. Technical Editing. 3 hours. The editing of drafts of technical manuals and other technical reports; the design of technical reports. Experience in applying rules governing technical-writing style. Prerequisite(s): ENGL 2700 is recommended.

4250. Writing Technical Procedures and Manuals. 3 hours. The application of the principles of technical style to the writing of technical procedures and manuals. Intensive practice in writing technical procedures and manuals. Prerequisite(s): ENGL 4180 is recommended.

4290. World Drama. 3 hours. Comparative study of Greek, Latin, Spanish, French, Russian, Japanese, Indian and English masterpieces; drama as a reflection of changing ideologies, customs and dramatic conventions.

4300. Modern Drama. 3 hours. Comparative survey of drama from the late 19th century to the present, emphasizing the globalization and increasing multiculturalism of the genre. Playwrights studied may include Henrik Ibsen, Bernard Shaw, Bertolt Brecht, Jean Genet, Wole Soyinka, Amiri Baraka, Caryl Churchill, Athol Fugard, August Wilson and David Henry Hwang. Satisfies the Cross-Cultural, Diversity and Global Studies requirement of the University Core Curriculum.

4400. American Fiction. 3 hours. Reading and analysis of American novels and short stories by Hawthorne, Melville, Twain, James, Faulkner, Hemingway, Welty and others.

4410. Chaucer. 3 hours. The Canterbury Tales and other works as a picture of medieval life and illustration of various literary types; the language of Chaucer and its development into modern English.

4420. Poetry. 3 hours. Methods of reading and analyzing poetry; techniques of explication. Includes poetry from a variety of cultures.

4430. Shakespeare. 3 hours. Representative comedies, histories and tragedies; survey of Shakespeare’s life; his relation to his predecessors and contemporaries.

4440. Milton. 3 hours. Prose and poetry of Milton; political and religious thought of his day; his relation to his predecessors and his contemporaries and his legacy to later writers.

4470. British Drama. 3 hours. May be offered as a survey from the origins into the 20th century or as a study of any of the major periods in the survey: medieval, Renaissance, Restoration and modern. May be repeated for credit as topics vary.

4480. American Drama. 3 hours. Offered as a historical survey of American drama or as a study of major authors and schools. Authors may include O’Neill, Miller, Williams, Hansberry, Albee. May be repeated for credit as topics vary.

4500. British Fiction. 3 hours. Reading and analysis of British novels and short stories by Defoe, Austen, Fielding, Dickens, Lawrence, Burgess, Hardy and others.

4600. Continental European Fiction. 3 hours. Study and analysis of continental European novels and short stories in translation. Works by Tolstoy, Dostoevsky, Balzac, Flaubert, Chekhov, Zola and others.

4700. Methods of Teaching Language Arts in the Secondary Grades. 3 hours. Strategies for teaching writing and literature effectively in secondary language arts programs. Emphasis on a variety of techniques. Must be taken during the last term/semester of course work before student teaching.

4760. Specialized Expository Writing. 3 hours. The application of rhetorical, analytical and organizational principles to the writing of expository prose in specialized areas of study.

4800. Special Seminar in Literature or Language. 1–3 hours. Study of a major author, topic or genre in literature or language that extends the scope of traditional offerings. May be repeated for credit as topics vary. May be used to fulfill a requirement for the Jewish studies minor when taught as “The Bible as Literature.”

4900–4910. Special Problems. 1–3 hours each.

4920. Cooperative Education in English. 1–3 hours. Supervised work in a job directly related to the student’s major, professional field of study or career objective. Prerequisite(s): 12 semester hours credit in English; student must meet employer’s requirements and have consent of the department chair. May be repeated for credit.

Linguistics, LING

3060. Principles of Language Study. 3 hours. An introductory linguistics course that focuses on the structure of English (phonology, morphology and syntax). The course includes language acquisition and development, the history of English, dialects of American English and problems of usage.

4010. English Language in America. 3 hours. May be offered as a survey of the origins into the 20th century or as a study of any of the major periods in the survey: medieval, Renaissance, Restoration and modern. May be repeated for credit as topics vary.

4020. Structure of Modern English. 3 hours. Modern English grammars, morphology, and syntax; principles of analysis and various theories of English structure; relationship between linguistic structure, rhetorical pattern and literary style. Prerequisite(s): LING 3060 or equivalent.

4030. Acquisition of English as a Second Language. 3 hours. Study of language acquisition, development, production and comprehension focusing on the application of current research findings to the context of learning and teaching English as a second language. Prerequisite(s): LING 3060 or four terms/semesters of a foreign language.

4040. General Linguistics. 3 hours. General introduction to the core systems of the languages of the world focusing on phonetics, phonology, morphology, syntax and semantics. Prerequisite(s): LING 3060 or equivalent.

4070. History of the English Language. 3 hours. The evolution of Modern English from Indo-European through Old English and Middle English. Prerequisite(s): LING 3060 or equivalent.

4080. Teaching English as a Second Language. 3 hours. Theory and method of teaching English as a second language. Study of major approaches with specific attention to methods of teaching, listening, speaking, reading and writing. Prerequisite(s): 12 hours of English and one Group C course.

4800. Special Seminar in Linguistics. 1–3 hours. Study of linguistics that extends scope of traditional offerings. Prerequisite(s): LING 3060. May be repeated for credit as topics vary.

Technical Writing – see Graduate Catalog

Ensembles, Music

see Music

Ethnomusicology, Music

see Music