

### Freshman Year

ET 101. Introduction to Engineering Technology (1 cr.) The development of engineering technology with an introduction to engineering technology, education, and practice.

DRFT 109. Computer Drafting Fundamentals (3 cr.) Introduction to computer-aided drafting. Principles and fundamentals of drafting using the latest version of AutoCAD software.

ET 120. Computer and Presentation Software (3 cr.) The use of database, spreadsheet, and presentation software in the field of engineering technology. Introduction to Internet resources and construction of homepages.

ET 154. Introduction to Construction Methods (3 cr.) Blueprint reading, specifications, and introduction to materials used in construction. **Fall only.**

ET 254. Concrete Technology (3 cr.) Fundamentals of aggregates, Portland cement, and asphalt used in design and construction. **Spring only.**

ENGL 111G. Rhetoric and Composition (4 cr.)

MATH 121. College Algebra (3 cr.)

MATH 190. Trig and Pre-Calculus (4 cr.)

PHYS 211/211L. General Physics I & Lab (4 cr.)

NOTE: There are 35 credits (11 classes) needed from the General Education Core Courses (see Undergraduate Catalog, pg. 15). 20 of these credits are listed here (English, Math, Physics Communications and Chemistry). The remaining 15 credits may be chosen from the list in Areas IV and V. It is suggested that 3 credits of these remaining 15 be taken the freshman year.

### Sophomore Year

DRFT 143. Civil/Surveying Drafting I (3 cr.) Introduction to drafting in the field of surveying and civil engineering. Drawings, projects, and terminologies related to topographic surveys/mapping, contour drawings, plan and profiles, improvement plats and streets/highway layout. Prerequisite: OEDG 109.

ET 240. Applied Statics (3 cr.) Forces acting on bodies at rest. Prerequisites: PHYS 211, MATH 121, and MATH 190.

ET 241. Applied Dynamics (3 cr.) Forces acting on bodies in motion. Prerequisites: ET 240 and MATH 235. **Fall only.**

SUR 222. Plane Surveying (3 cr.) Surveying theory and practice as applied to plane surveying, in these areas: error propagation, linear measurements, angle measurements, area determination, differential and trigonometric leveling, and topographic mapping. Prerequisite: Eligible to take MATH 235.

CHEM 110G. Principles & Applications of Chemistry (4 cr.)

COMM 253G Public Speaking or COMM 265G. Principles of Human Comm. (3 cr.)

ENGL 218G. Technical and Scientific Communication or approved equivalent (3 cr.)

MATH 235/236. Calculus for the Technical Student I & II (6 cr.)

PHYS 212. General Physics II or ET 190. Applied Circuits (3 cr.)

6 more credits from the General Education Core Courses.

### Junior Year

ET 306. Fundamental and Applied Thermodynamics (3 cr.) 1st and 2nd laws, properties of substances, thermodynamic cycles including power generation and refrigeration. Prerequisite: MATH 235.

ET 308/308L. Fluid Technology and Lab (4 cr.) Application of basic principles of fluid mechanics to practical applied problems. Prerequisites: MATH 235 and ET 240.

ET 310/310L. Applied Strength of Materials & Lab (4 cr.) Application of principles of strength of materials to practical design and analysis problems. Prerequisites: MATH 235 and ET 240.

ET 332. Applied Design of Structures I (4 cr.) An introduction to indeterminate structures. Use of various building codes for development of allowable and factored loads on structures. An introduction to allowable stress design and strength design concepts of structural components using steel and concrete. Required use of computer software such as spreadsheets, databases, and self developed programs and design aids. Prerequisites: MATH 236, ET 310/310L. **Spring only.**

ET 354. Soil and Foundation Technology (4 cr.) Fundamentals of investigation of soil properties and their importance in design, construction, and testing as related to buildings, roads, dams, and other structures. Design of foundations considering slope stability, bearing capacity and settlement. Prerequisites: ET 240, and ET 254. **Fall only.**

ET 355. Site/Land Development & Layout (3 cr.) Techniques, method, and takeoffs for infrastructure layout, site plan design, grading, earthwork, utilities, road construction. Prerequisite: SUR 222, OEDG 143, and junior standing. **Spring only.**

ET 302. Manufacturing Data Analysis (3 cr.) or approved course in statistical applications.

MGT Elective (counts as one Viewing a Wider World course) MGT 315G. Human Relations in Organizations; or MGT 345G. Quality and Competitiveness; or MGT 388G. Leadership and Society; or other approved management course. (3cr.)

Viewing a Wider World (second course). List of approved VWW courses is available in the Department Office. (3 cr.)

3 more credits from the General Education Core Courses.

### Senior Year

CE 450. Engineering Economy and Law; or BLAW 316. Legal Environment of Business; or BLAW 325. Real Estate Principles and Law I or approved course in business law (3 cr.)

ET 410. Senior Seminar (1cr.)  
Transition from academics to business and industry. Graded S/U. Prerequisite: Senior standing in ET.

ET 412. Highway Technology (3cr.)  
Road-vehicle performance, geometric alignment, traffic analysis, highway materials, pavement design, plan and profile development. Prerequisites: SUR 222 and ET 355. **Spring only.**

ET 418. Applied Hydraulics (3cr.) Introduction to hydrology, hydraulic equations, hydraulic cross-sections, control structures, and collection and distribution of water, waste water, and storm runoff using closed conduit & open channel flow. Prerequisite: ET 308 and MATH 236. **Spring only.**

ET 420. Senior Internship (3cr.) An internship requiring a minimum of 150 clock hours of varied and progressive experience in current construction methods. Taken senior year of program.

OR

ET 435. Senior Project (3cr.) A project in an area of civil engineering technology conducted under the direction of a civil engineering technology faculty member. Project must be one that can be completed

within a semester and of sufficient complexity for 3 credits. Taken last semester of program.

ET 432. Applied Design of Structures II (4 cr.)  
Continuation of ET 332, Design of structural systems, and their response to various loadings. Design of wood and masonry systems included. Prerequisites: ET 332. **Fall only.**

Technical Electives I, II & III (9 cr.) List of approved electives is available in the Department Office.

Surveying Elective (3 cr.) List of approved electives is available in the Department Office.

3 more credits from the General Education Core Courses.

### Construction Concentration Requirements - For the "Construction Concentration," the following substitutions should be made:

*In place of Technical Elective I –*

ET 454. Advanced Construction Technology (3 cr.)  
Contractor design and construction methods concerning formwork, special foundations, shoring, excavations, pilings, steel erection, and various material handling components. Prerequisite: ET 355. **Fall only.**

*In place of Technical Elective II –*

ET 455. Cost estimating and Scheduling (3 cr.)  
Methods and techniques in construction estimating including final bid preparation, construction planning and scheduling using various network methods and other techniques. Prerequisite: Junior or Senior standing in ET. **Fall only.**

*In place of Technical Elective III -*

MGT 453. Leadership and Motivation; MGT 454. Work Teams in Organizations; MGT 461. Seminar in Entrepreneurship (3 cr.)

*In place of Surveying Elective -*

SUR 328. Construction Surveying (3 cr.)