ENGR 180. Introduction to Naval Ships Systems I. 3 Hours.
The concept of weapons systems and the systems approach are explored. The techniques of linear analysis of ballistics and weapons are introduced. The dynamics of the basic components of weapons control systems are investigated and stated as transfer functions. This course provides the tools for the future development in the student’s understanding of the basic principles that underlie all modern naval weapons systems. Approved for degree credit in the College of Liberal Arts and Sciences effective fall 1971. Such courses count within the limit of 25 hours accepted from other schools and divisions. (Same as NAVY 180.) Prerequisite: MATH 002. LEC.

ENGR 184. Introduction to Naval Ships Systems II. 3 Hours.
The concept of weapons systems and the systems approach are explored. The techniques of linear analysis of ballistics and weapons are introduced. The dynamics of the basic components of weapons control systems are investigated and stated as transfer functions. This course provides the tools for the future development in the student’s understanding of the basic principles that underlie all modern naval weapons systems. Approved for degree credit in the College of Liberal Arts and Sciences effective Fall 1971. Such courses count within the limit of 25 hours accepted from other schools and divisions. (Same as NAVY 184.) LEC.

ENGR 300. Cooperative Engineering Education Experience. 1 Hour.
Engineering work experience with a recognized engineering organization. The work must be professional in nature and not merely routine. A final summary report must be submitted to the student's major department at the conclusion of each continuous period of employment and may cover more than one sequential semester or summer session. Credit for this course cannot be used toward graduation requirements. Prerequisite: Permission of major department. FLD.

ENGR 301. Navigation and Operations I. 3 Hours.
First semester juniors. Three hours classroom and two and one-half hours laboratory per week. A comprehensive study of the theory, principles, and procedures of ship navigation in coastal and open ocean environment. Includes piloting, triangulation, ocean and tidal currents, navigational astronomy, spherical trigonometry, sight reduction, publications and logs; an introduction to electronic navigation, including theory of wave propagation, hyperbolic and azimuthal systems, doppler, inertial, and satellite systems. (Same as NAVY 300.) LEC.

ENGR 304. Technology: Its Past and Its Future. 3 Hours.
An examination of the role of technology and its influence on society. The historical development of technology will be traced up to modern times with an emphasis on its relations to the humanities. Attention will be given to the future of different branches of technology and alternative programs for their implementation. (Same as HIST 404.) LEC.

ENGR 305. Navigation and Operations II. 3 Hours.
A study of the laws for the prevention of collisions at sea; tactical formations and dispositions, relative motion, and the maneuvering board. A portion of the semester is devoted to an analysis of naval operations utilizing formal decision making theory, particularly as applied to command and control. Numerous case studies are used to examine the application of the above topics. Approved for degree credit in the College of Liberal Arts and Sciences effective fall 1971. Such courses count within the limit of 25 hours accepted from other schools and divisions. (Same as NAVY 304.) Prerequisite: MATH 111 or higher. NAVY 300 or ENGR 301. LEC.
ENGR 360. Special Topics: _______. 1-5 Hours.
Courses on special topics of current interest to engineers, such as ethics, engineering economics, engineering practice, communications, teamwork, and professional and career development. Prerequisite: Approval of the instructor. FLD.

ENGR 490. Engineering Internship. 1-6 Hours.
Engineering internship in an approved company. Internship hours do not satisfy any course requirements for a bachelors degree in any School of Engineering major, but will appear on the transcript. Credit assigned after review of report on internship experience. INT.

ENGR 504. Technical Writing for Engineers. 1-3 Hours.
The process of planning, organizing, initiating, drafting, and editing engineering documents is covered through writing assignments and discussion. Writing, editing, and publishing the Kansas Engineer magazine. Graded on satisfactory/unsatisfactory basis. Prerequisite: ENGL 102. FLD.

ENGR 515. Verbal Communications in Engineering. 1 Hour.
Meets one hour per week. Planning, preparing, and presenting speeches on a variety of topics throughout the semester. Includes preparing speeches, spontaneous speeches and the evaluation of speeches by other students. Prerequisite: Two English courses and at least junior or senior standing in engineering or consent of instructor. FLD.

ENGR 600. Engineering Applications in India: Technical, Business, and implementation Issues. 3 Hours.
Business principles play a crucial role in shaping engineering solutions. This course will communicate key differences between the United States and India in how engineering challenges and opportunities are shaped by these principles and by culture. Students will travel to India to attend lectures from schools, visit companies, engage in class discussion/debate, and attend cultural excursions. Prerequisite: Major in Engineering. LEC.

ENGR 835. Project (ME). 3-6 Hours.
A design problem or system study satisfying the project requirement for the Master of Engineering degree. THE.

ENGR 940. Project (DE). 1-16 Hours.
A major design problem or system study satisfying the project requirement for the Doctor of Engineering degree. THE.