

MEGR Technical Electives

Summer 2017 Offerings

These offerings are contingent upon achieving a minimum enrollment.

Course No.	Course Name	Prerequisites
	Note: Students that do not complete the required prerequisites prior to the fall semester need to drop the follow-on course(s) (or they may be dropped from courses without notice)	
MEGR 3225-020 CRN 40832	Finite Element Analysis (<i>approved Motorsports, Biomedical and Energy elective</i>) The basic concepts of FEA are introduced. Pertinent concepts from linear algebra are reviewed. Simple elements such as truss and beam elements are emphasized, with an introduction to continuum elements. Math software is used to illustrate theory fundamentals. A commercial finite element code is also introduced.	MEGR 2144 and MEGR 2240, both with a grade of C or above
MEGR 3231-010 (Raquet) CRN 31234	Advanced CAD/CAM (<i>approved Motorsports technical elective</i>) An introduction to advanced CAD features and tools, CAM interface operations, design data management and reverse engineering; also application of the appropriate feature types to simplify the design process and increase the flexibility of the parametric model.	ENGR 1202 and MEGR 2156 both with a C or above
MEGR 4127-010 (Conrad) CRN 30970	Introduction to Robotics This course investigates aspects of Electrical, Computer, and Mechanical Engineering in the design of autonomous robots. Skills include motion kinematics, circuit design, and programming. We use a Systems Engineering approach to create and control several autonomous vehicles during the semester.	MEGR 3171L with a grade of C or above; senior standing.

Approved non-MEGR Technical Electives

MATH 3171 CRN 40826	Applied Math (<i>Approved ME Technical Elective but NOT for Motorsports, Biomedical or Energy concentrations; does NOT simultaneously count as a math elective</i>) Separation of variables techniques for the classical partial differential equations of mathematical physics; Fourier series; Sturm-Liouville theory.	MATH 2241 and 2171, with a grade of C or above
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Important Notes:

- Students must take at least three of the four required technical electives from MEGR-designated courses.
- Students who wish to take a technical elective course outside the Department of Mechanical Engineering must receive approval from the Director of Undergraduate Programs **before** registering for such courses. Students will not receive credit otherwise.
- Students pursuing concentrations must complete technical electives that are approved for their concentration.