

**SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS**

New Course Request

SDSU	Jerome J. Lohr College of Engineering/ Mechanical Engineering	
Institution	Division/Department	
Dennis D. Hedge		12/11/2018
Institutional Approval Signature		Date

Section 1. Course Title and Description

Prefix & No.	Course Title	Credits
ME 441	Robotic Systems	3
ME 541	Robotic Systems	3

Course Description
<p>This course develops understanding of the kinematic and dynamic modeling, design, and control of robots functioning in both terrestrial and aerial environments. Topics include inertial and body reference frames, rigid body motion, homogeneous transformations, Denavit-Hartenberg representation, forward and inverse kinematics, Lagrangian dynamics, modeling in Simulink, linear control design, introduction to advanced controllers, optimal control of a quadrotor. Students conduct hands-on experiments with mobile robots, manipulators and quadrotors.</p>

ME 441 Pre-requisites or Co-requisites

Prefix & No.	Course Title	Pre

