PURDUE UNIVERSITY | College of Engineering

Engineering Faculty Document No.: 121-23
March 24, 2023

TO: The Engineering Faculty

FROM: The Faculty of the Lyles School of Civil Engineering

RE: Requisite Changes to CE 20300 Principles and Practice of Geomatics

The Faculty of the Lyles School of Civil Engineering has approved the following requisite and course description changes to an undergraduate course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

Requisite & Course Description Change for CE 20300 Principles and Practice of Geomatics

Underline the changes to be made.

FROM:

Basic surveying measurements and computations for engineering project control, mapping, and construction layout; theory of observational errors and error propagation; fundamental concepts of horizontal and ve1iical control systems; use of topographic maps and plan-profile sheets; computation of horizontal and vertical curves; introduction to computer tools used in Civil Engineering.

Prerequisites: MA 16500, CGT 16400

TO:

This course provides a broad overview of geomatics engineering including fundamental principles required for practical geomatics applications. The course includes subjects in traditional surveying, GPS surveying, remote sensing, photogrammetry, laser scanning, and Geographic Information Systems (GIS). Basic concepts on these subjects are applied to solve practical problems in various civil engineering applications; including computations for engineering project control and construction layout; theory of error propagation; fundamental concepts of horizontal and vertical curves; topographic mapping using various geospatial data acquisition technologies from ground, air and space; GIS for visualization and analysis of geospatial data.

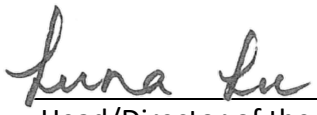
Prerequisites: MA 16500

RATIONALE:

Course Description Change: Geospatial data acquisition has expanded beyond traditional surveying instruments to remote sensing modalities such as imaging and laser scanning systems onboard a variety of platforms such as airborne and terrestrial vehicles (especially, unmanned aerial vehicles - UAVs). Moreover, GIS has been established as the tool for the manipulation of geospatial data and products. These modalities/tools are becoming quite pervasive in all civil engineering sub- disciplines. This course is desigl1eo ensure the readiness of our graduates to

embrace these new technologies.

Requisite Change: Learning outcomes from the CGT 16400 - Computer Graphics are not required for CE



Head/Director of the Lyles School of Engineering

Link to Curriculog entry:

https://purdue.curriculog.com/proposal:24147/form