HIGHLAND
COMMUNITY COLLEGE
WWW.HIGHLANDCC.EDU
606 W. MAIN, HIGHLAND, KS 66035

AB 148 – Positioning Systems Management
Prerequisite: None
3 Credit Hours (Lecture)

Department:

Precision Agriculture

Course Description:

The Global Navigation Satellite System (GNSS) is a worldwide, satellite-based navigation system used for aviation, remote sensing, shipping, vehicle tracking, surveying, time transfer, search and rescue operations, and personal communications via satellite. This course provides an introduction to this rapidly growing field, covering both applications and the technology that makes satellite navigation possible. It is by nature an interdisciplinary course, covering subject material in orbit prediction, satellite systems, signal processing, error modeling, computer programming, digital and microwave electronics.

Course Competencies:

1. Learn key concepts of satellite-based navigation
2. Apply GPS technology to tracking and monitoring systems
3. Introduction to autosteer systems and the economic and operator benefits
4. Explored additional GPS applications

Course Content:

A. Introduction to the GNSS
B. Fundamentals of the GNSS
C. Measurements, Errors, and Corrections
D. Differential
E. Basic Codes
F. Positioning Signals
G. Frequency Domain
H. GNSS Link Analysis and Receivers
I. Antennas, Acquisition and Tracking
J. Code Tracking Loop Models
K. Carrier Tracking Loops
L. Modernization
M. Global Positioning
N. Carrier Phase Techniques

Syllabus

Learning Assessments:

A. Discussion Questions
B. Graded Assignments
C. Comprehensive Assignments
D. Research Paper/Projects/Presentation/Portfolio
E. Quizzes and Exams

Instructional Materials:

Printed materials and videos will be provided in this course. No textbook required.

**Guidelines for Requesting Accommodations Based on
Documented Disability or Medical Condition**

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the "Disabilities Self-Identification Form" at this link: https://highlandcc.edu/pages/disability-services.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.

Syllabus