The Physics and Astronomy Department offers graduate-level course work but no graduate degree programs.

**Graduate Faculty**
Matthew Evans, Ph.D.
Lyle Ford, Ph.D. (Chair)
J. Erik Hendrickson, Ph.D.
Lauren Likkel, Ph.D.
Nathan Miller, Ph.D.
Kim Pierson, Ph.D.
James Rybicki, Ph.D.
George Stecher, Ph.D.
Paul Thomas, Ph.D.
Scott Whitfield, Ph.D.

No graduate degree programs offered.

Courses in Physics are offered as electives for programs in other disciplines.

All 500- and 600-level graduate courses include requirements or assignments which differentiate them from their companionate 300- and 400-level undergraduate offerings. Students who have taken a course at the 300- or 400-level may not include that course at the 500- or 600-level in a graduate program, except in the case of special topics courses when the topic is not the same as that taken at the undergraduate level.

**PHYS 561 LabVIEW Basics (2 crs)**
Consent: Instructor Consent Required
• Cross-listed with PHYS 361. Credit may not be earned in both courses. Field trip(s) optional.

Lecture and laboratory work cover an introduction to graphical programming language LabVIEW. LabVIEW has been widely adopted as the industry standard for computerized data acquisition, analysis and instrument control.

Attributes: Field Trip(s) Required
Grading Basis: A-F Grades Only
Lecture/Discussion Hours: 2
Lab/Studio Hours: 0

**PHYS 562 LabVIEW Applications (2 crs)**
Consent: Instructor Consent Required
• Cross-listed with PHYS 362. Credit may not be earned in both courses. Field trip(s) optional.

Lecture and laboratory exercises cover applications using the graphical programming language LabVIEW. Topics include advanced programming structures, Compact DAQ hardware, digital signal processing, motor control, encoders, PID Process control, RS-232 instrument control, component testing, sensor monitoring.

Attributes: Field Trip(s) Required
Grading Basis: A-F Grades Only
Lecture/Discussion Hours: 2
Lab/Studio Hours: 0

**PHYS 563 LabVIEW cRIO (1 cr)**
Consent: Instructor Consent Required
• Cross-listed with PHYS 363. Credit may not be earned in both courses.

Lecture and laboratory exercises cover the theory and application of the cRIO automation controller using the graphical programming language LabVIEW. Topics include Real-Time operating system, field programmable gate array (FPGA) and network shared variables.

Attributes: Field Trip(s) Required
Grading Basis: A-F Grades Only
Lecture/Discussion Hours: 1
Lab/Studio Hours: 0

**PHYS 793 Directed Studies (1-4 crs)**
Permits groups of students to study topical areas in an intensive way under the direction of departmental faculty members.
Repeat: Course may be repeated
Grading Basis: No S/U Grade Option