

Space Studies (SPAC)

SPAC 110 Introduction to Space Flight 3 Credits (3,0)

Major aspects of space flight; history; propulsion theory; orbital mechanics fundamentals; space transportation operations; U.S. space policy; present and future commercial, industrial, military space applications.

Course Offered at: Daytona Beach, Worldwide

SPAC 199 Special Topics in Space Studies 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in space studies.

Course Offered at: Daytona Beach, Prescott

SPAC 200 Planetary and Space Exploration 3 Credits (3,0)

Survey of U.S. and international space programs, methods of scientific exploration, and spacecraft design at an introductory physics level.

Course Offered at: Daytona Beach

SPAC 210 Space Transportation System 3 Credits (3,0)

Survey of space transportation systems at the introductory physics level. Topics include crewed space flight operations, space shuttle missions, and future space station logistical operations.

Course Offered at: Daytona Beach

SPAC 215 Space Station Systems and Operations 3 Credits (3,0)

Overview of the International Space Station and Russian Mir spacecraft. Topics include commercial applications, logistical support, maintenance, and servicing.

Course Offered at: Daytona Beach

SPAC 220 Life Support Systems 3 Credits (3,0)

Survey of space and planetary life support systems at the elementary physics level. Topics include human physiology, space environment, and historical life support systems.

Course Offered at: Daytona Beach

SPAC 230 Space Policy and Law - History 3 Credits (3,0)

Foundational concepts of international space policy and law; U.S. role in space policy development. Public, private, and military uses of space; planetary protection; human spaceflight.

Prerequisites: COMM 122

Course Offered at: Daytona Beach

SPAC 299 Special Topics in Space Studies 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in space studies.

Course Offered at: Daytona Beach, Prescott

SPAC 300 Satellite and Spacecraft Systems 3 Credits (3,0)

Foundational concepts of orbital satellites and spacecraft design, application, and environment. Satellite communications, attitude control, electrical power, thermal control, mission payload systems, space environment, and limitations.

Daytona Beach Prerequisites: MATH 112 or MATH 143 or MATH 241

Prescott Prerequisites: MATH 112 or MATH 143 or MATH 241

Course Offered at: Daytona Beach, Worldwide, Asia

SPAC 315 Space Policy 3 Credits (3,0)

Geopolitical, technological, historical context and external societal forces influence space policy making. Examine policy alternatives connecting science, culture and society; ethical dilemmas of global policy development and exploration's influence on human aspirations and anxieties.

Course Offered at: Worldwide

SPAC 330 Spaceflight and Operations Training 3 Credits (3,0)

Astronaut and cosmonaut selection and training. Parallels with military pilot training; evolution of spaceflight training programs; current and future space training techniques and facilities.

Daytona Beach Prerequisites: SPAC 210 or SPAC 215 or SPAC 220

Course Offered at: Daytona Beach, Worldwide, Asia

SPAC 340 Russian Space Operations and Technology 3 Credits (3,0)

Russian space flight history from early concepts to the International Space Station. Examination of Soviet space programs and current Russian space operations.

Course Offered at: Daytona Beach

SPAC 390 Payloads and Integration 3 Credits (3,0)

Spacecraft and payload subsystems integration; performance and validation procedures.

Prerequisites: PHYS 113 or PHYS 150 or PHYS 226

Course Offered at: Daytona Beach

SPAC 399 Special Topics in Space Studies 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in space studies.

Course Offered at: Daytona Beach, Prescott, Worldwide

SPAC 400 Introduction to Space Navigation 3 Credits (3,0)

Basic elements of space navigation at the introductory physics level; Kepler's laws, gravitation, and central force motion. Navigating near-Earth orbits, the Moon, and planets.

Daytona Beach Prerequisites: MATH 112 or MATH 143 or MATH 241 and PHYS 113 or PHYS 150 or PHYS 226

Course Offered at: Daytona Beach, Worldwide, Asia

SPAC 410 Space Operations Planning and Analysis 3 Credits (3,0)

Safety assurance, risk analysis, and contingency planning for each phase of space flight; launch pad and range safety considerations.

Prerequisites: SPAC 300 and COMM 221

Course Offered at: Daytona Beach

SPAC 425 Selected Topics in Space and Aerospace 3 Credits (3,0)

Applications in space operations, space flight, or other space-related topics. Specific topics selected by the course monitor and instructor.

Prerequisites: MATH 112 or MATH 143 or MATH 241 and junior standing and have declared the SPO minor

Course Offered at: Daytona Beach

SPAC 490 Senior Space Operations Project 3 Credits (3,0)

Interdisciplinary coordination of a simulated space industry operation. Launch, flight, or training program.

Prerequisites: SPAC 300 and CPSC 118

Course Offered at: Daytona Beach

SPAC 499 Special Topics in Space Studies 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in space studies.

Course Offered at: Daytona Beach, Prescott, Worldwide