

Education: Summer Internships

Aerospace Careers: INTERNSHIPS with SpaceX



Internship/Co-Op Fall 2011

Internships and Co-Ops | Hawthorne, CA, United States

Introduction

SpaceX is a US based space technology company founded by its residing CEO and CTO, Elon Musk, the former co-founder of PayPal. The company's goal is to renew a sense of excellence in the space industry by disrupting the current paradigm of complacency and replacing it with innovation and commercialized price points; laying the foundation for a truly space-faring human civilization.

SpaceX builds rockets and spacecraft from the ground up; including electronics, software, vehicle structures, and engines. In-house development includes nearly all flight critical custom components amounting to approximately 85% of our vehicles both by mass and by value. Our development and production efforts represent some of the most dynamic and challenging technology problems seen in any organization.

Our success is driven by a wide variety of engineering perspectives and openness to all great ideas. We pride ourselves on being a meritocracy where employees are defined by their capabilities and contributions, instead of title or tenure. We are actively seeking the best and brightest minds from all industries to continue to build our world class team.

Our employees thrive in a fast-paced engineering ecosystem focused on innovation and high levels of personal responsibility. At SpaceX we cut through the noise and believe in the essentials of hardcore engineering.

We build it, test it, and fly it.

The Opportunity:

SpaceX is currently seeking talented individuals for our Internship/Co-Op Program at our Los Angeles Headquarters. SpaceX engineering interns play a significant role in the design, development, testing, and manufacturing of spaceflight hardware.



Here at SpaceX, you will obtain invaluable hands-on technical experience that you can't learn in a classroom. Our engineers will help you to roll up your sleeves and apply text book theory and lab experience to creating solutions for real aerospace challenges. You will gain practical experience by participating in actual space hardware development projects.

The most successful candidates for SpaceX's Internship/Co-Op Program have a history of significant contributions to hands-on extracurricular engineering projects in addition to a strong academic record. Many participants in SpaceX's Internship/Co-Op Program return as full-time employees upon completing their higher education.

The Groups:

At Civil Air Patrol, the volunteer auxiliary of the U.S. Air Force, we're helping develop tomorrow's aerospace workforce.

Avionics (Electronics) – Our Avionics group works to design, develop, test, analyze and integrate all the electronic hardware and software for our vehicles. This includes but is not limited to: flight software, flight computers, power conversion units, analog and digital circuit boards, FPGA's, communication system units, guidance, navigation and control as well as enclosure and wire harness development.

Majors represented are mainly: *Aerospace Engineering, Computer Engineering, Computer Science, Electrical Engineering, and Mechanical Engineering.*

Avionics (Software) – The primary software function at SpaceX is housed in the Avionics group; this elite team writes and validates all the flight code that guides the vehicle to/in orbit. The programming in the flight computers also runs real time analysis of the vehicle in-flight to ensure nominal performance on flight controls and sensors for Falcon rockets and the Dragon spacecraft. Software engineers at SpaceX enjoy executing a mission critical role and are challenged by developing complex, high reliability code from cradle to grave.

Majors represented are mainly: *Computer Engineering, Computer Science, and Electrical Engineering.*

Dynamics – Our Dynamics group focuses on mathematical modeling and environments testing. Their role is to use the latest modeling tools to simulate the environments and loads a vehicle will see in flight in order to provide the best possible design parameters to our design teams. In other words, they provide the initial inputs we use when beginning a design. A good dynamics team lays a strong foundation for the rest of the company.

Majors represented are mainly: *Aerospace Engineering, Mechanical Engineering, and other Interdisciplinary Engineering.*

Launch Operations – The Launch Operations group is tasked with final vehicle integration and launch/mission execution. They are also responsible for the launch pad infrastructure, including ground support equipment and tooling. The hardware produced by the other departments is delivered to the Launch Ops group for integration into one seamless, beautiful system. Once the vehicle is integrated, they do final vehicle roll out, check out, and countdown for launch. This team does a significant amount of travel to and from our launch sites.

Majors represented are mainly: *Aerospace Engineering, Electrical Engineering, and Mechanical Engineering.*

Manufacturing/Operations – One of the most critical needs we now have at SpaceX is for Manufacturing /Operations engineers. With two vehicles flight proven, we have a \$3 billion backlog of sold flights. The next critical phase is proving our ability to build rockets with increasing speed while maintaining quality in order to meet the markets high demand. We are looking to add manufacturing engineers throughout the company.

Majors represented are mainly: *Civil Engineering, Electrical Engineering, Industrial Engineering, Manufacturing Engineering, Materials Science, Mechanical Engineering, and other Interdisciplinary Engineering.*



Propulsion (Engines) – Our Propulsion group brings together some of the brightest minds in the engine business. We currently build more rocket engines than any other organization in the country, furthermore the design and performance parameters of SpaceX engines are notably recognized

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throughout the industry. Our team built the first human rated engines to see spaceflight since the Space Shuttles Main Engines were built over 30 years ago.

Majors represented are mainly: *Aerospace Engineering and Mechanical Engineering*.

Structures – Our Structures group is responsible for both primary and secondary structures, as well as tooling and machine design. We do both metallic and composite structural fabrication in-house. Most of what you actually see when looking at a launch vehicle or spacecraft is done by our Structures group. With mass and cost so closely correlated in the space business, our Structures group is constantly striving to develop the most efficient body structures ever created.

Majors represented are mainly: *Aerospace Engineering and Mechanical Engineering*.

*Please note this is not a complete list of all groups. Opportunities may be available in other areas.

Requirements

- Must currently be enrolled at a four-year university or college
- Must be a U.S. citizen or a U.S. permanent resident (i.e. green card holder)

Additional position information

SpaceX offers one of the best environments in the world for employees to learn, build real working systems and tackle exciting challenges every day. We operate in a fun, casual work environment. Our Intern benefits include: competitive salary and free gym memberships. By joining the SpaceX team, you are not just a part of history, you are making it.

SpaceX is an Equal Opportunity Employer; employment with SpaceX is governed on the basis of merit, competence and qualifications and will not be influenced in any manner by race, color, religion, gender, national origin/ethnicity, veteran status, disability status, age, sexual orientation, marital status, mental or physical disability or any other legally protected status.

To conform to U.S. Government space technology export regulations, SpaceX hires only U.S. citizens and U.S. Permanent Residents.

Those applicants requiring reasonable accommodation to the application/interview process should notify the Human Resource Department at (310) 363-6000.

Links to more job descriptions click below:

<http://www.spacex.com/careers.php>

<http://www.spacex.com/careers.php> (Internships 2012)

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Links to more Information click below:

<http://www.spacex.com/index.php>

<http://www.spacex.com/dragon.php>



Courtesy: [SpaceX]

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