Electro-Mechanical Technicians operate, test, maintain, or calibrate unmanned, automated, servo-mechanical, or electromechanical equipment. May operate unmanned submarines, aircraft, or other equipment at worksites, such as oil rigs, deep ocean exploration, or hazardous waste removal. May assist engineers in testing and designing robotics equipment.

DUTIES

A person in this career:

- Tests performance of electromechanical assemblies, using test instruments such as oscilloscopes, electronic voltmeters, or bridges.
- Reads blueprints, schematics, diagrams, or technical orders to determine methods and sequences of assembly.
- Inspects parts for surface defects.
- Installs electrical or electronic parts and hardware in housings or assemblies, using soldering equipment and hand tools.
- Verifies part dimensions or clearances to ensure conformance to specifications, using precision measuring instruments.
- Aligns, fits, or assembles component parts, using hand or power tools, fixtures, templates, or microscopes.
- Develops, tests, or programs new robots.
- Prepares written documentation of electromechanical test results.
- Repairs, reworks, or calibrates hydraulic or pneumatic assemblies or systems to meet operational specifications or tolerances.
- Operates, tests, or maintains robotic equipment used for green production applications, such as waste-to-energy conversion systems, minimization of material waste, or replacement of human operators in dangerous work environments.

Drones (although many in the industry prefer other terms such as unmanned aircraft systems) are used in a variety of areas. With the FAA's recent approval of the use of UAS in the civilian air space, companies will develop many more uses for these handy aircraft.

Drones are currently used for: crop monitoring, military operations, power line inspection, border patrol surveillance, filmmaking, endangered species protection, package delivery, aerial photography, sports broadcasting, real estate marketing, oil and gas exploration, disaster relief, forest fire detection and fighting, land and archaeological surveying, weather monitoring and more.

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SALARY INFORMATION

Location	2018				
	10%	25%	Median	75%	90%
California	$36,360	$46,100	$59,210	$75,740	$96,180

*Pay period based on yearly amount.

EMPLOYMENT OUTLOOK

Stable growth rate is estimated to be **8%**

220 estimated annual job openings

RELATED OCCUPATIONS

Manufacturing Production Technicians
Avionics Technicians
Electrical and Electronics Repairers, Commercial and Industrial Equipment
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic
Printing Press Operators

DRONE TECHNOLOGY AND APPLICATIONS

Typical duties of drone pilots include:

- conducting pre-mission planning meetings with flight directors and/or customers
- developing flight plans, checking any notices of potential flight hazards filed with the FAA, re-checking weather conditions, and coordinating airspace integration with any affected controlling agencies or owners of private property
- launching drones with the assistance of a catapult, by throwing them into the air, or by release from a manned aircraft
- piloting the drone to fulfill the goals of the mission (e.g., military reconnaissance, checking the degree of flooding in a particular area, monitoring a national park for signs of poachers, delivering a pesticide treatment to a field of soybeans, checking the condition of power lines in an inaccessible area, etc.)
- performing preflight, in-flight, and post-flight checks and procedures
- completing safety risk assessments prior to flight and after action reviews post-flight
- troubleshooting, diagnosing, and repairing drones in the field (for some positions)
- recovering the drone at the end of the mission (for some positions)

OUTLOOK

In 2016, the Federal Aviation Administration approved the use of drones in the civilian aviation airspace, which is expected to fuel strong growth in the industry. In fact, the Association for Unmanned Vehicle Systems predicts that the UAS industry will create more than 100,000 jobs (including drone pilots, but also engineers and manufacturing workers) and provide more than $82 billion in economic impact during the first decade following full UAS integration. The largest number of commercial opportunities will be found in the agriculture sector.

SOUTHWESTERN COLLEGE MAJORS Drone Technology and Applications