Satellite Rescue Career Bingo—Career Descriptions

TEACHER RESOURCE

AEROSPACE ENGINEER

Description

Perform engineering work in designing, constructing, and testing aircraft, missiles, and spacecraft. Conduct research on aircraft design. Recommend improvements in testing equipment and techniques.

Tasks

Design aeronautical or aerospace products to meet customer requirements.

Direct engineering of aircraft or aerospace products.

Plan and conduct experimental and stress tests on models and prototypes of aircraft and aerospace systems and equipment.

AEROSPACE ENGINEERING AND OPERATIONS TECHNICIAN

Description

Operate, install, and maintain computer/communications systems, simulators, and other data instruments to launch, track, and evaluate air and space vehicles. May record and interpret test data.

Tasks

Exchange cooling system components in various vehicles.

Meet with engineering personnel regarding details of test procedures and results.

Test aircraft under simulated operational conditions.

Perform readiness tests and pre- and postoperational checkouts to establish design features.

Operate computer systems and devices.

AIRLINE PILOT, COPILOT, and FLIGHT ENGINEER

Description

Pilot and navigate the flight of multiengine aircraft for the transport of passengers and cargo. Obtain a certification for the type of aircraft being flown.

Tasks

Instruct other pilots and student pilots in aircraft operations and the principles of flight.

Work as part of a flight team with other crew members, especially during takeoffs and landings.

Steer aircraft along planned routes with the assistance of autopilot and flight management computers.

ATMOSHPERIC AND SPACE SCIENTIST

Description

Investigate atmospheric phenomena. Interpret data gathered by stations, satellites, and radar. Prepare reports and forecasts for public and other uses.

Tasks

Broadcast weather conditions, forecasts, and severe weather warnings to the public using television, radio, and the Internet.

Study and interpret data, using computer models.

Prepare forecasts and briefings to meet the needs of industry, business, government, and other groups.

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AVIONICS TECHNICIAN

Description

Install, inspect, test, adjust, or repair avionics equipment, such as radar, radio, navigation, and missile control systems in aircraft or space vehicles.

Tasks

Connect components to assemblies such as radio systems, instruments, and in-flight refueling systems, using hand tools and soldering irons.

Assemble components such as switches, electrical controls, and junction boxes, using hand tools and soldering irons.

Adjust, repair, or replace malfunctioning components or assemblies, using hand tools and/or soldering irons.

Set up and operate ground support and test equipment to perform functional flight tests of electrical and electronic systems.

BIOMEDICAL ENGINEER

Description

Apply knowledge of engineering and biology to the design, development, and evaluation of biological and health systems and products, such as artificial organs, prostheses, and instrumentation.

Tasks

Develop models or computer simulations of human bio-behavioral systems in order to obtain data for measuring or controlling life processes.

Diagnose and interpret bioelectric data.

Develop new applications for energy sources, such as using nuclear power for biomedical implants.

Design and deliver technology to assist people with disabilities.

Design and develop clinical instrumentation, equipment, and procedures.

Conduct research along with life scientists, chemists, and medical scientists on the engineering aspects of the biological systems of humans and animals.

CALIBRATION AND INSTRUMENTATION SPECIALIST

Description

Develop, test, calibrate, operate, and repair many types of instruments. Instruments include mechanical, electromechanical, and electrohydraulic measuring and recording instruments.

Tasks

Sketch plans for developing instruments and related equipment.

Disassemble and reassemble instruments and equipment, using hand tools.

Inspect instruments and equipment for defects.

Select sensing, telemetering, and recording instrumentation and circuitry.

CARDIOVASCULAR TECHNOLOGIST AND TECHNICIAN

Description

Conduct tests on pulmonary or cardiovascular systems of patients.

Tasks

Explain testing procedures to patients to obtain cooperation and reduce anxiety.

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Enter factors such as amount and quality of radiation beam into computer.

Conduct electrocardiogram, phonocardiogram, echocardiogram, stress testing, and other cardiovascular tests to record patients' cardiac activity.

Compare measurements of heart wall thickness and chamber sizes to normal measurements to identify abnormalities.

Attach electrodes to the patients' chests, arms, and legs; connect electrodes to leads from the electrocardiogram (EKG) machine; and operate the EKG machine to obtain a reading.

Assist physicians in diagnosis and treatment of cardiac and peripheral vascular treatments.

CHEMIST

Description

Conduct chemical analyses or experiments in laboratories for quality control or to develop new products or knowledge.

Tasks

Develop, improve, and customize products, equipment, formulas, processes, and analytical methods.

Analyze organic and inorganic compounds to determine chemical and physical properties.

Determine the composition, structure, and relationships of compounds, using chromatography techniques.

Prepare test solutions, compounds, and reagents for laboratory personnel to conduct test.

ELECTRICAL ENGINEER

Description

Design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.

Tasks

Design, maintain, and improve electrical instruments, equipment, products, and systems for commercial, industrial, and domestic purposes.

Operate computer-assisted engineering and design software and equipment.

Oversee project production efforts.

Prepare technical drawings and maps to make sure that operations conform to customer requirements.

Perform calculations to establish manufacturing and construction standards.

EMERGENCY MANAGEMENT SPECIALIST

Description

Coordinate disaster response or crisis management activities. Provide training on preparing for disasters. Prepare emergency plans and procedures for natural and other disasters

Tasks

Study emergency plans used elsewhere in order to gather information for plan development.

Prepare plans that outline operating procedures to be used in response to disasters/emergencies, such as hurricanes, nuclear accidents, and terrorist attacks, and in recovery from these events.

Satellite Rescue Career Bingo—Career Descriptions

Apply for federal funding for emergency management-related needs; administer such grants and report on their progress.

INTERNIST, GENERAL

Description

Diagnose and provide nonsurgical treatment of diseases and injuries of internal organ systems.

Tasks

Advise patients about diet, activity, hygiene, and disease prevention.

Prepare government or organizational reports on birth, death, and disease statistics or the medical status of individuals.

Advise surgeon of a patient's risk status and recommend appropriate intervention to minimize risk.

Treat internal disorders, such as hypertension, heart disease, diabetes, and problems of the lung, brain, kidney, and gastrointestinal tract.

Monitor patients' conditions and progress and reevaluate treatments as necessary.

MATHEMATICIAN

Description

Conduct research in fundamental mathematics or in application of mathematical techniques to science, management, and other fields. Solve problems in various fields by mathematical methods.

Tasks

Apply mathematical theories and techniques to the solution of practical problems in business, engineering, or the sciences.

Address the relationships of quantities, magnitudes, and forms through the use of numbers and symbols.

Perform computations and apply methods of numerical analysis to data.

Conduct research to extend mathematical knowledge in traditional areas, such as algebra, geometry, probability, and logic.

MEDICAL ASSISTANTS

Description

Perform administrative and clinical duties under the direction of physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and giving medications.

Tasks

Interview patients to obtain medical information and measure their vital signs, weight, and height.

Record patients' medical history, vital statistics, and information, such as test results in medical records.

Prepare and administer medications as directed by a physician.

Collect blood, tissue, or other laboratory specimens, log the specimens, and prepare them for testing.

Help physicians examine and treat patients, handing them instruments and materials or performing such tasks as giving injections and removing sutures.

REGISTERED NURSES

Description

Assess patient health problems and needs, develop nursing care plans, and maintain

medical records. Administer nursing care to ill, injured, or disabled patients. Licensing or registration required. Advanced practice nursing is practiced by RNs who have specialized formal education.

Tasks

Maintain accurate, detailed reports and records.

Monitor, record and report symptoms and changes in patients' conditions.

Modify patient treatment plans as indicated by patients' responses and conditions.

Deliver infants and provide prenatal and postpartum care and treatment under obstetrician's supervision.

Order, interpret, and evaluate diagnostic tests to identify and assess patient's condition.

Consult and coordinate with health care team members to assess, plan, implement and evaluate patient care plans.

RESPIRATORY THERAPIST

Description

Treat and care for patients with breathing disorders. Supervise respiratory therapy treatment, maintain patient records, and operate equipment.

Tasks

Set up and operate devices such as ventilators, control systems, and aerosol generators.

Provide emergency care, including artificial respiration, external cardiac massage, and cardiopulmonary resuscitation.

Determine treatment, such as type of therapy, precautions to be taken, and medication, according to doctor's orders.

Monitor patient's responses to therapy by checking vital signs, blood gases, blood chemistry changes, etc.

Work as part of a team of doctors, nurses, and other health care professionals to manage patient care.

Maintain charts that contain patients' identification and therapy information.

STATISTICIAN

Description

Collect and interpret numerical data to provide useful information. Contribute to development of mathematical theory. Specialize in fields such as biostatistics, agricultural statistics, business statistics, or other fields.

Tasks

Analyze and interpret statistical data in order to identify significant differences in relationships among sources of information.

Adapt statistical methods in order to solve specific problems in many fields, such as economics, biology, and engineering.

Prepare data for processing by organizing information, checking for any inaccuracies, and adjusting and weighting the raw data.

