



This workforce solution was funded by a grant awarded under Workforce Innovation in Regional Economic Development (WIRED) as implemented by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner.

The Century Club's Careers in Manufacturing



Where ^{do} YOU want ^{to} Go?



Machine Operator
1-2 Years Vocational Education
1-2 Years Experience
\$18,000-\$25,000 per Year



Certified Welder
1-2 Years Vocational Education
3-5 Years Experience
\$30,000-\$50,000 per Year



Designer
2-4 Years Education
3-5 Years Experience
\$40,000-\$60,000 per Year



**Electrical Engineer
/Software Engineer**
4 (or more) Years Education
3-5 Years Experience
\$50,000-\$70,000 per Year



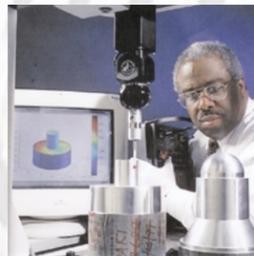
CNC Machinist
1-2 Years Vocational Education
3-5 Years Experience
\$25,000-\$40,000 per Year



**Precision Assembler
/Electrical Installer**
1-2 Years Vocational Education
3-5 Years Experience
\$30,000-\$50,000 per Year



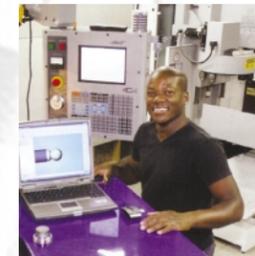
Manufacturing Engineer
2-4 Years Education
3-5 Years Experience
\$40,000-\$70,000 per Year



Quality Assurance Manager
4 (or more) Years Education
3-5 Years Experience
\$60,000-\$80,000 per Year



Journeyman Machinist
1-2 Years Vocational Education
5-10 Years Experience
\$35,000-\$50,000 per Year



CAD/CAM Programmer
2-4 Years Education
3-5 Years Experience
\$40,000-\$60,000 per Year



Mechanical Engineer
4 (or more) Years Education
3-5 Years Experience
\$50,000-\$70,000 per Year



Plant Manager
4 (or more) Years Education
10 Years-plus Experience
\$100,000 plus per Year



“Ensuring Manufacturing's Future”



Vision for Space Exploration

An Opportunity for YOU to Explore Space

Prepare NOW for a Lifetime of Exciting, Rewarding Career Opportunities



VISION FOR SPACE EXPLORATION
ENGINEERS AND SCIENTISTS NEEDED!

2010-2012	2015	2018	2020	2030
LUNAR ROBOTIC MISSIONS	1st HUMAN CEV FLIGHT	7th HUMAN LUNAR LANDING	MARS EXPEDITION DESIGN BEGINS	MARS LANDING
*10th & 12th GRADERS	*7th GRADERS	*4th GRADERS	*2nd GRADERS	*CHILDREN BORN IN 2008

***ALL OF THESE ASSUME 4 YEAR UNDERGRAD DEGREE**

Why should I care?

Vision will provide tremendous career opportunities for young people currently in school who work to excel at math, science, computers and engineering.

What is the Vision? The Vision for Space Exploration is a bold plan to extend humanity's presence across the solar system, starting with a return to the Moon and ultimately journeys to Mars and beyond.

Why is the Vision important? The Vision will advance America's scientific, national security and economic goals in space. In other words, it will make us smarter, safer and more prosperous. We will better understand the universe around us, maintain freedom through leadership, and create jobs for American workers and their families.

Can we afford the Vision? Yes, the Vision will be implemented in an affordable, step-by-step fashion involving robotic and human missions that require an investment of less than 1 percent of the total federal budget. That's a cost of under 15 cents per day to the American taxpayer – or, in other words, less than the cost of two text messages!

What will be needed to make the Vision a reality? The Vision will require development of new spacecraft and launch systems. It will push the bounds of technology. It will demand the very best from America while creating new opportunities for cooperation with other countries interested in the peaceful exploration of space.

Does space exploration involve only astronauts?

While brave men and women will continue to join the ranks of astronauts traveling to and working in space, the Vision will require a host of other job opportunities and skills carried out right here on planet Earth. These include, for example:

- Engineering and high-tech manufacturing positions related to the design, development, production and operation of spacecraft and their supporting systems;
- Information technology jobs that involve developing software code needed to safely operate space systems; and
- Scientific research positions to support astronauts and/or conduct experiments.

What do I need to do to prepare for a career in space?

The foundation for the technical careers in space that will shape our nation's future and contribute to an improved quality of life for all humanity is math, science and/or computer knowledge learned through the course of your classes starting in elementary school and continuing on through high school, college and graduate studies.

Go anywhere.

Completion of 52 units is required from the following courses for the associate in science (A.S.) degree and certificate program with the mechatronics emphasis. The A.S. degree will be awarded when a minimum of 21 units of general education courses, defined in the Graduation Requirements section of the Allan Hancock College catalog, have been satisfactorily completed.



Allan Hancock College is a California public community college in northern Santa Barbara County serving more than 11,000 credit students each semester. The college offers degrees and certificates in more than 100 fields of study. The college has a campus in Santa Maria and centers in Lompoc, Solvang and at Vandenberg AFB.

800 South College Drive
Santa Maria, CA 93454-6399
(805) 922-6966

www.hancockcollege.edu



Printing of this brochure is supported in part by funding from the California Innovation Corridor WIRED (Workforce Innovation in Regional Economic Development) grant, in partnership with the California Space Authority.

Photo credits to Dennis Steers, Cal Poly College of Engineering, for the three photos on inside of brochure.

The Allan Hancock Joint Community College District is committed to the active promotion of diversity and equal access and opportunities to all staff, students, and applicants, including qualified members of underrepresented/protected groups. The college assures that no person shall be discriminated against because of race, color, ancestry, religion, gender, national origin, age, physical/mental disability, medical condition, status as a Vietnam-era veteran, marital status, or sexual orientation.

Allan Hancock College will provide, upon request, alternate translation of its general information documents in large print, Braille, e-text etc. Please call (805) 922-6966 ext 3788.



- **Associate in Science Degree in Engineering Technology**
or
Electronics Technology with Emphasis in Mechatronics
(73 units)
- **Certificate of Completion**
(52 units)



Start here.

Interested in aerospace and love working with hands-on, “nuts and bolts” technology?

Mechatronics could be for you.

Mechatronics lets you build and manipulate things, combining the best parts of mechanical engineering, electronics, controls engineering and computers. It emphasizes links between machine and computer, using software to guide a physical system like a robot.

What you're paid is not half-bad, either – salaries go up to \$90K annually. Great demand for these skills is expected in the coming years, due to industry growth, anticipated retirements and difficulty for outside people to relocate.*

You have an advantage.

You're already here.

*LD Associates, “Aerospace Technician Demand Assessment Study,” January 2006.

Start a career anywhere.

Technicians with mechatronics training are in high demand, especially in automation and manufacturing related fields. More than 1,000 aerospace technicians work in the Vandenberg area. Plenty of job opportunities are close to home.

Your mechatronics skills will never be out of date. Along with aerospace, mechatronics-related jobs can be found in:

- Medical facilities
- Industrial robotics
- Automotive technology
- Manufacturing and maintenance
- Security systems



Required Core Courses (37 units)

		Course Units
COM SC-121	Fundamentals of Programming I	4 units
EL-104 or COM EL-104 or ET-104	Intro to Robotics and Mechatronics	3 units
EL-111 and 112 (8 wk courses)	Basic Electronics DC with Lab	2.5 units
EL-113 and 114 (8 wk courses)	Basic Electronics AC with Lab	2.5 units
EL-122 and 123	Analog and Op-Amp with Lab	5 units
COM SC-141 or EL-125	Computer Fund. in Digital Design	3 units
COM SC-142 or EL-126	Computer Fund. in Digital Design Lab	2 units
MT-330 or WLD-306	Print Reading/Layout & Fabrication	3 units
EL-146 or WLD-189	Fabrication & Project Design	2 units
MT-109	Survey of Machining	4 units
ET-140	Engineering Drawing	3 units
Space-128	Materials & Processes	3 units

Plus specialty courses (15 units).

Complete your degree at Allan Hancock College and enter the job market or continue your education at a four-year university. Much of the curriculum is transferable to California State Universities. Agreements that earn you automatic acceptance to a bachelor's degree program are in place.

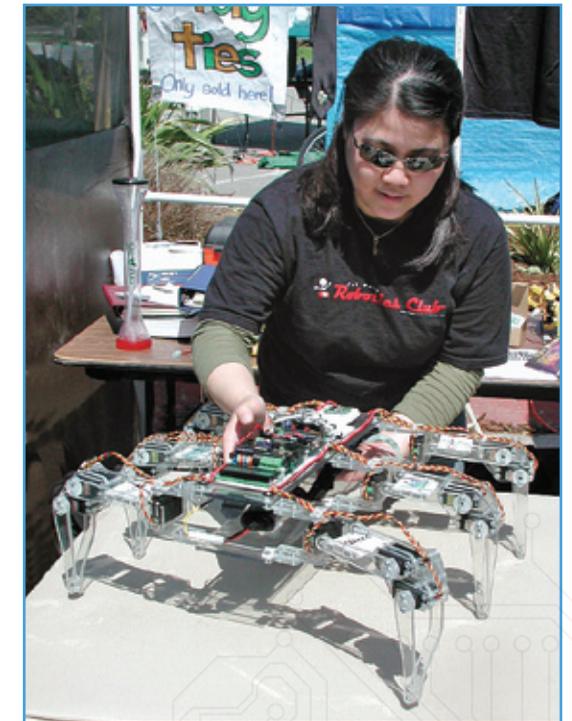
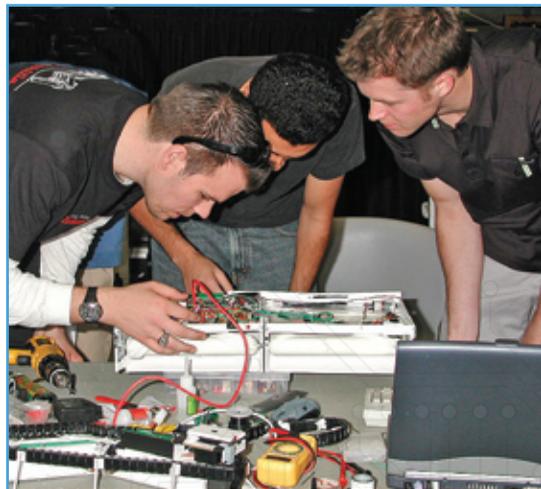
Contact instructor

Robert (Bob) Alldredge with questions:

- Phone (805) 922-6966 ext. 3201
- boball@hancockcollege.edu

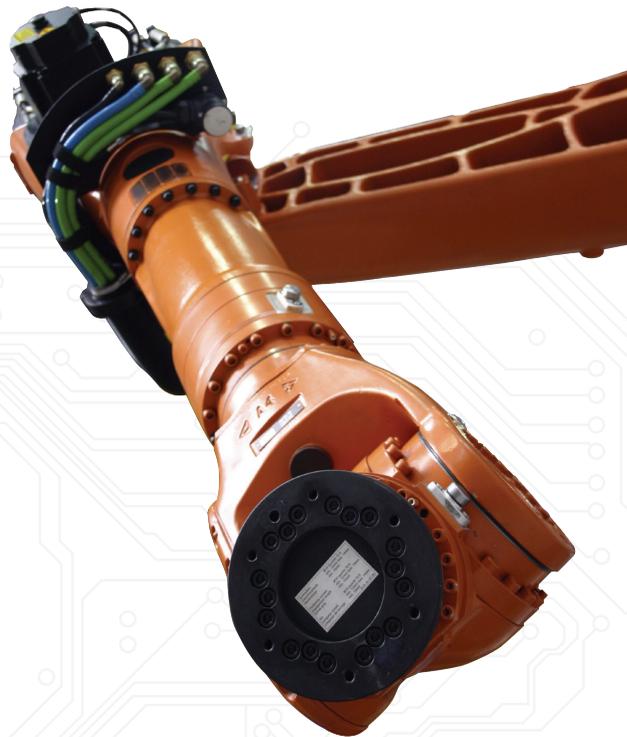
Contact the **University Transfer Center** for transfer information:

- Phone (805) 922-6966, ext 3363



Go anywhere

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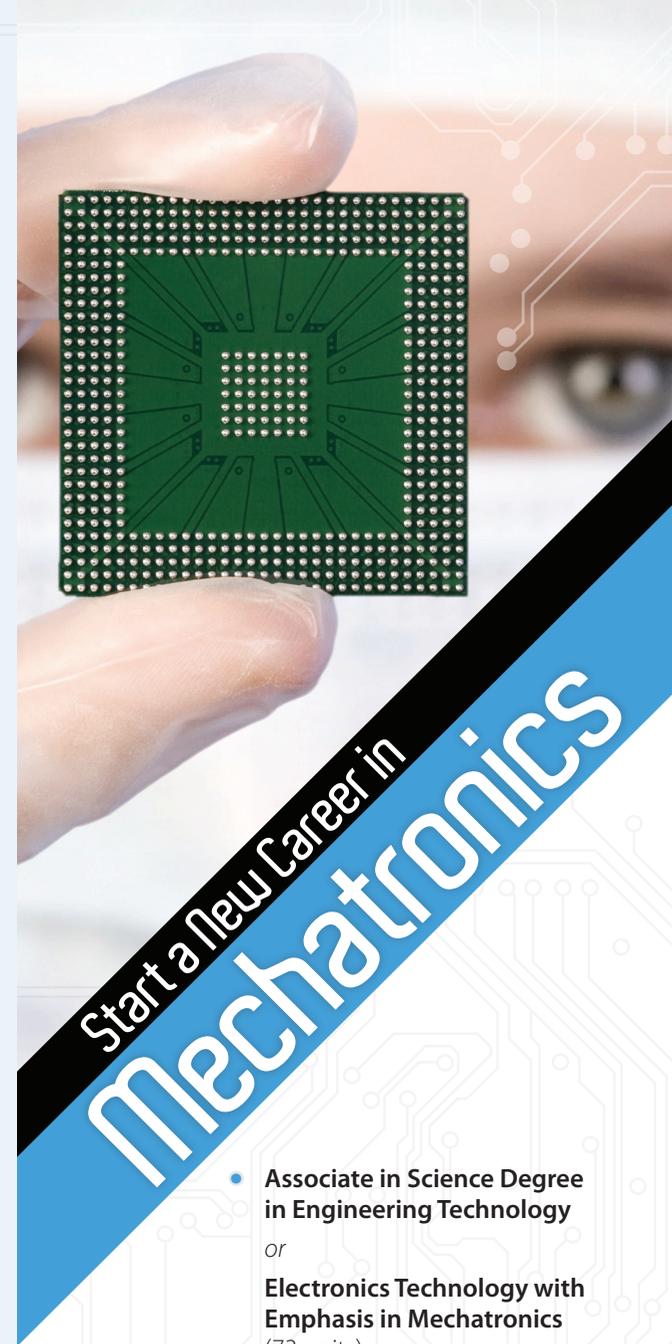


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*Photo credits:
Inside: NASA-JPL*

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Start a new career here

Stuck in a dead-end job? If going to work every day is a struggle, consider something you may actually enjoy -- a career in Mechatronics could be for you.

Mechatronics provides a general knowledge of mechanical engineering, controls engineering, electronics and computers. It emphasizes links between machines and computers, using software to guide the physical components creating an automated system.

Automated systems range from robotic arms on assembly lines, as in the automotive industry, to precision-controlled lasers in the medical device industry, to the new wave of moving and talking toys on the market today. To put it plainly, an automated system is any computer or electronically controlled device.

Salaries support a comfortable lifestyle on the Central Coast, reaching up to \$90K annually. Great demand for these skills is expected in the coming years, due to industry growth, anticipated retirements and difficulty for outside people to relocate.*

- **Associate in Science Degree in Engineering Technology**
or
Electronics Technology with Emphasis in Mechatronics
(73 units)
- **Certificate of Completion**
(52 units)



*LD Associates, "Aerospace Technician Demand Assessment Study," January 2006.

Master new skills

Technicians with mechatronics training are in high demand, especially in automation and manufacturing-related fields. More than 1,000 aerospace technicians work in the Vandenberg AFB area. *Plenty of job opportunities are close to home and nationwide.*

Your mechatronics skills will never be out of date. Along with aerospace, mechatronics-related jobs can be found in:

- medical facilities
- industrial robotics
- automotive technology
- manufacturing and maintenance
- security systems



Required Core Courses (37 units)

COM SC 121
 EL/COM EL/ET 104
 EL 111 and 112 (8 wk courses)
 EL 113 and 114 (8 wk courses)
 EL 122 and 123
 COM SC 141 or EL 125
 COM SC 142 or EL 126
 MT 330 or WLD 306
 EL 146 or WLD 189
 MT 109
 ET 140
 Space 128

Fundamentals of Programming 1
 Intro to Robotics & Mechatronics
 Fund. of DC Circuit Analysis with Lab
 Fund. of AC Circuit Analysis with Lab
 Electronic Devices & Circuits with Lab
 Digital Devices & Circuits
 Digital Devices & Circuits Lab
 Print Reading & Interpretation
 Fabrication & Project Design
 Survey of Machining
 Engineering Drawing
 Materials and Processes

Course Units

4
 3
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Plus specialty courses (15 units), selected from among the following:

COM SC 122
 COM SC 175
 COM SC 164
 EL/COM SC 105 or
 EL/COM SC 320
 EL/ COM SC 106
 EL/ COM SC 107
 EL/COM EL/ET 128
 EL/COM EL/ET 131
 EL/COM EL/ET 133
 EL 135
 EL 136
 EL/COM SC 137
 EL/COM EL/ET 138
 EL/COM EL/ET 139
 EL/COM SC 148
 EL/COM EL/ET 162
 ET 100
 MT 110
 PHYS 100 or 110 or
 PHY SC 111
 SPACE 104
 WLD T 106
 WLD T 107
 WLD T 307 or 308
 WLD T 315

Fundamentals of Programming 2
 Object-Oriented Programming
 Software Engineering
 PC Preventive Maintenance & Upgrade
 A+ Certification
 Networking Essentials 1
 Networking Essentials 2
 Renewable Energy
 Programmable Logic Controllers
 Transducers & Sensors
 Electronic Measurement & Instr.
 Electronic Measurement & Instr. Lab
 Microcomputer Arch. & Software Design
 Intro to MC 68000 Microprocessor Family
 Elec. Power, Motors & Controls
 Mechatronic Systems
 Fluid Power & Control
 Computer Aided Drafting & Design
 Machine Tool Practices
 Concepts in Physics
 Matter, Energy & Molecules
 Quality Management Control & Safety
 Beginning Welding
 Advanced Welding
 GMAW or TIG Welding
 Metal Fabrication

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Build and recharge your future

Complete your degree at Allan Hancock College and enter the job market, or if you wish to continue, much of the curriculum is transferable to California State Universities. Allan Hancock College has agreements in place that earn you automatic acceptance to many universities.

Contact instructor **Robert (Bob) Alldredge** with questions:

- (805) 922-6966 ext. 3335
- boball@hancockcollege.edu

Contact the **University Transfer Center** for transfer information:

- (805) 922-6966 ext. 3363



Start a career here.
Build a future anywhere.

MECHATRONICS

at Allan Hancock College

Explore hands-on, advanced technology that merges mechanical engineering, controls engineering, electronics and computers. Design, build and manipulate robots. Automated systems are found everywhere.

- Two year associate degree in Engineering Technology or Electronics Technology
- Certificate of Completion option
- Earn \$45,000 per year and up
- Jobs available locally



Contact instructor **Robert (Bob) Alldredge**
for more information:

- Phone (805) 922-6966 ext. 3201
- boball@hancockcollege.edu





Culinary Careers!

Check out our new Culinology® associate in arts degree. Developed by the Research Chef's Association, Culinology® blends food science technology with culinary arts and nutrition.

A new state-of-the-art commercial teaching kitchen supports this degree program as well as other culinary classes in the culinary arts and management program. See pages ___ for classes.

FEES REDUCED!

The enrollment fee is now **\$20 a unit**. It's the lowest college tuition in the nation--right here at Allan Hancock College!
(All California community college enrollment fees are set by the state legislature)

Did you know?

You may be eligible to receive financial aid—money you don't have to pay back—whether you are attending college part or full time. To find out if you qualify—Just ask!

1-866-DIAL AHC ext. 3216

¿Inglés?

¡Si se puede! Usted puede mejorar sus habilidades de hablar, leer y escribir en inglés. Reférase a la página 21.

REGISTER

WebReg: Nov. 26, 2007-Jan. 9, 2008

In-person: January 14 & 15, 2008

Late In-person: January 22-31, 2008

Take a Class Online

See page 41 for details.

Board of Trustees

Larry Lahr, president
Tim Bennett, vice president
Carol Anders
Henry Grennan
Bernard E. Jones

José M. Ortiz, Ed.D.,
superintendent/president

Questions? Toll free 1-866 DIAL AHC (342-5242) Ext. 3248

(From Santa Barbara and San Luis Obispo counties)

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ECRWSS
Residential Customer,
Local



Nonprofit Org.
U.S. POSTAGE
PAID
PERMIT No. 103

Schedule

A Great Career Opportunity!

Mechatronics

Combines engineering, electronics, robotics and computers

- Two-year associate degree in Engineering Technology or Electronics Technology

- Earn \$45,000 and up

- Jobs available locally

See inside for details.



Spring credit classes begin
January 22, 2008

www.hancockcollege.edu



Start here. Go anywhere.