



ESYS

Electronic Systems Technology Program
Chabot College

Update for CE Committee Mttg

Monday, 11-15-21

By Frank Ko

Associate in Science Degree ESYS: Electronics Systems Technology at Chabot College

- ▶ Seven core courses (21 units) towards AS Degree (60 units):
 - ▶ ESYS 50 Introduction to Electronics Systems Technology, 4 units
 - ▶ ESYS 51 Fabrication Techniques for ESYS, 2 units
 - ▶ ESYS 54 Analog Circuits and Semiconductor Devices, 3 units
 - ▶ ESYS 55 IoT & Microcontroller Systems, 3 units
 - ▶ ESYS 57 PLCs & Process Control Systems, 3 units
 - ▶ ESYS 63 IT Essentials: PC Hardware and Software, 3 units
 - ▶ ESYS 69 Robotics & Industrial Control Systems, 3 units

Certificate of Achievement: Industrial Electronic Technology

- ▶ Six core courses (18 units)
 - ▶ ESYS 50 Introduction to Electronics Systems Technology, 4 units
 - ▶ ESYS 51 Fabrication Techniques for ESYS, 2 units
 - ▶ ESYS 54 Analog Circuits and Semiconductor Devices, 3 units
 - ▶ ESYS 55 IoT & Microcontroller Systems, 3 units
 - ▶ ESYS 57 PLCs & Process Control Systems, 3 units
 - ▶ ESYS 69 Robotics & Industrial Control Systems, 3 units

Certificate of Achievement: Consumer Technology

- ▶ Six core courses (18 units)
 - ▶ ESYS 50 Introduction to Electronics Systems Technology, 4 units
 - ▶ ESYS 51 Fabrication Techniques for ESYS, 2 units
 - ▶ ESYS 54 Analog Circuits and Semiconductor Devices, 3 units
 - ▶ ESYS 55 IoT & Microcontroller Systems, 3 units
 - ▶ ESYS 57 PLCs & Process Control Systems, 3 units
 - ▶ ESYS 63 IT Essentials: PC Hardware and Software, 3 units

ESYS Student Population

ESYS Student Population		Fall 2021	Summer 2021	Spring 2021
ESYS 50	Intro to ESYS	21	14	10
ESYS 51	Fabrication Techniques		14	
ESYS 54	Analog & Semiconductors	20		
ESYS 55	IoT & Microcontrollers			10
ESYS 57	PLCs & Process Control	16		
ESYS 63	CISCO Computer Course	15		
ESYS 69	Robotics & Industrial Control			12

ESYS Supported TOP Codes from CCC Taxonomy of Programs

▶ 0934.00 - Electronics and Electric Technology

- ▶ Theory and application of electric and electronic systems and components, including circuits, electro-magnetic fields, energy sources, communications devices, radio, and television circuits, computers, and other electric and electronic components and devices.

▶ 0934.10 - Computer Electronics

- ▶ Principles of computer design and circuitry, systems and network architecture and maintenance, components and peripherals, problem diagnosis and repair.

▶ 0934.20 - Industrial Electronics

- ▶ Assembly, installation, operation, maintenance, and repair of electronic equipment used in industry and manufacturing. Includes fabrication and assembly of electronic and related components.

▶ 0934.60 - Biomedical Instrumentation

- ▶ Operation, maintenance, and installation of devices associated with biomedical measurements and medical life support

▶ 0935.00 - Electro-Mechanical Technology

- ▶ Design, development, testing, and maintenance of electro-mechanical and servo-mechanical devices and systems.

▶ 0943.00 - Instrumentation Technology

- ▶ Design, manufacture and use of display devices and systems for detection, observation, measurement, control, computation, communication, or data processing.

▶ 0943.30 - Vacuum Technology

- ▶ Assembly, installation, maintenance, and repair of various vacuum actuated systems and devices

▶ 0945.00 - Industrial Systems Technology and Maintenance

- ▶ Design, construction, maintenance, and operation of mechanical, hydraulic, pneumatic, and electrical equipment and related systems, such as production machinery. Includes building and plant maintenance.

Justification for SWF Funding = LMI Data

513 Annual Job Openings, Alameda County & \$67,291 Avg Annual Earnings!

2018-2028 Occupational Projections						Clear Filters
SOC Code	Occupational Title	Entry Level Education	2018 Jobs	2018-2028 Total Job Openings	Annual Job Openings	Average Annual Earnings
17-3013	Mechanical Drafters	Associate's degree	390	420	42	\$69,422
17-3019	Drafters, All Other	Associate's degree	180	200	20	\$69,822
17-3023	Electrical and Electronics Engineering Technicians	Associate's degree	2,280	2,620	262	\$68,056
17-3024	Electro-Mechanical Technicians	Associate's degree	130	150	15	\$61,589
17-3026	Industrial Engineering Technicians	Associate's degree	370	460	46	\$58,408
17-3027	Mechanical Engineering Technicians	Associate's degree	280	300	30	\$64,200
17-3029	Engineering Technicians, Except Drafters, All Other	Associate's degree	940	1,060	106	\$72,828
19-4031	Chemical Technicians	Associate's degree	640	710	71	\$60,665
19-4091	Environmental Science and Protection Technicians, Includ	Associate's degree	420	560	56	\$57,300
27-1021	Commercial and Industrial Designers	Bachelor's degree	620	690	69	\$81,092
49-2094	Electrical and Electronics Repairers, Commercial and Ind	Postsecondary non-degree award	410	370	37	\$70,342
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	1,200	1,230	123	\$81,149
49-9043	Maintenance Workers, Machinery	High school diploma or equivalent	460	450	45	\$62,917
49-9071	Maintenance and Repair Workers, General	High school diploma or equivalent	8,500	9,010	901	\$57,417

<http://www.coecc.net/Supply-and-Demand.aspx> *

Justification for SWF Funding = Completions

In past 12 months:

2 Graduates were hired by BART (G. Hallett & C. Herrnandez)

4 Graduates were hired into electronics industry

3 received promotions within their existing companies

TOP6 - Program Title	2017-18	2018 -19	2019 -20	Latest 3 Yr Avg
093400 - Electronics and Electric Technology				
Chabot Hayward				
Associate Degree	3	6	4	4
Certificate 18 < 30 semester units	32	7	-	13
Certificate 16 < 30 semester units	-	-	6	2
093400 - Electronics and Electric Technology Total	35	13	10	19
Grand Total	35	13	10	19

Justification for SWF Funding

- ▶ 2020 and before = no internship programs
- ▶ 2021 = two internship programs”
 - ▶ Skyworks, San Jose = \$ 30 billion worldwide company: Communications electronics
 - ▶ United Systems, Hayward = Fire suppression, security, surveillance systems
- ▶ Per requests from Advisory Board Meeting
 - ▶ Acquired 1st and now acquiring 2nd FANUC Robot Arm similar to those at Tesla
 - ▶ Acquiring spectrum analyzers similar to those used at Skyworks
 - ▶ Acquiring Datex Communications Training Modules to update radio frequency skills

What else ESYS does for student success:

- ▶ Along with the technical skills of ESYS, we strongly emphasize building up the “soft skills” of:
 - ▶ Good time management
 - ▶ Effective verbal & written communications
 - ▶ Teamwork & collaboration
- ▶ We help our students find jobs via regular postings in Discord.com of internship and job opportunities
- ▶ We provide practice interviews and help with resume writing! Here’s one we just completing last Thursday after class!



The image shows a resume for Jose Pino, a 1st year college student. The resume is divided into several sections: Contact Me At, Skills Summary, Awards Received, Personal Profile, Work Experience, and Educational History. The contact information includes a physical address in Richmond, CA, an email address, and a phone number. The skills summary lists several strengths such as being highly motivated, having good communication skills, being a fast learner, and being able to work independently or as part of a team. The awards section mentions earning bonus points for submitting work before due dates. The personal profile section describes Jose as a motivated and fast learner who can communicate effectively and work well in a team setting. The work experience section describes his role as an Electronic Lab student at Chabot College, where he has gained experience in reading schematics, connecting circuits, and using various lab equipment. The educational history section lists his enrollment at Chabot College in the Electronic Systems Tech AS Degree Program, with a list of courses and a GPA of 3.50.

JOSE PINO
1ST YEAR COLLEGE STUDENT

PERSONAL PROFILE
I am a 1st year student in the Electronics Technology Program at Chabot College, Hayward CA. I am highly motivated, eager and a fast learner. I can communicate effectively either verbally or in written form. I can work well independently with little supervision or can also work well in a team setting. I am seeking to work in an electronics or communications company to offer my skills and enthusiasm to advance the company!

WORK EXPERIENCE
Electronic Lab student where I can read schematics, connect circuits, analyze circuits, measure and test circuits. I am familiar using oscilloscopes, function generators, DMMs and other Lab bench equipment.

EDUCATIONAL HISTORY
Chabot College
Electronic Systems Tech AS Degree Program

- 1st semester:
- Ohm's, Watts, & Kirchoff's Laws
- DC & AC circuits Analysis & Measurements
- Hand-On circuit building & Troubleshooting
- Oscilloscope & Function Generator Used for AC circuits
- Soldering Projects & Follow Lab Safety Protocols
- GPA: 3.50

CONTACT ME AT
717 20th Street
Richmond CA 94801
joseblahlah1@gmail.com
510-717-4854

SKILLS SUMMARY
**** Highly Motivated to perform at maximum potential
*** Good communication skills, verbal and written
*** Fast learner, only need instructions once
*** Can work independently
*** Can work well as part of a team
*** Good time management skills

AWARDS RECEIVED
Earned BONUS points for submitting work before due dates .

Conclusion:

- ▶ The afore mentioned actions represent improvements to our ESYS Program!
- ▶ A major outcome with these improvements will be for our graduates to realize greater employment opportunities with enhanced skills in the areas of RF frequency skills to meet the demands of the cellular, broadcast, microwave and data communications industries such as Skyworks, Verizon, ATT, and other telecommunications companies.
- ▶ Another major outcome with these improvements is focused on increasing our graduates' marketability for jobs in industrial process control, robotics, advanced manufacturing, mechatronics, operation/maintenance of production line systems, and PLC controlled automation systems by virtue of enhancing their troubleshooting, diagnostic and hands-on analytical skills.
- ▶ Thank you very much for supporting our ESYS Program!