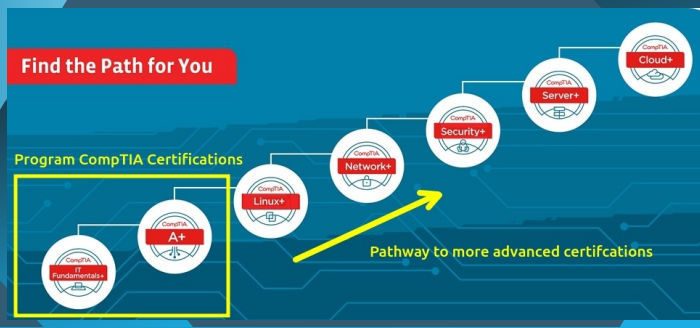
MJC CTE DIVISION: ICT: COMPUTER ELECTRONICS ADVISORY MEETING NOTES



Date: March 19, 2021

Time: 12:00pm – 1:30pm
Facilitator: Dean Mendez

In Attendance

Pedro Mendez (MJC CTE Division), Dallas Plaa (Stanislaus County Office of Education), Brian McDermott (Team SOS), Dejeune Shelton (MJC Career Services Center), Tim Vaughan (MJC Computer Electronics Faculty), Diana Velo (MJC CMPET Alumni, CSUS Student),

Approval of Minutes

No approval of prior minutes, provided by Lead Faculty Member: Tim Vaughan.

Program Update

Dean Mendez provided an update on the curriculum and program adjustments that Professor Tim Vaughan is working on a major revision for the Computer Electronics Certificate and Degree Program.

The current program includes 4 required courses which are 3-units each:

ELTEC 300—SURVEY OF APPLIED TECHNOLOGIES

3 UNITS - 36 Lecture Hours, 54 Lab Hours

Survey of applied technologies in the Advance Manufacturing, Transportation, or Construction Industry. Topics include electricity, small engines/industrial mechanics, common computer software and robotics.

CMPET 206—PERSONAL COMPUTER ASSEMBLY, UPGRADING & REPAIRING

3 UNITS - 36 Lecture Hours, 54 Lab Hours

An introductory course in assembling, upgrading and repairing of personal computer systems. Emphasis on hands-on laboratory activities with personal computer hardware. Operating principles of computer subsystems and peripheral devices. Use of diagnostic software and hardware tools. Multi-user system setup and maintenance.

CMPET 210—INTERMEDIATE PC SERVICING WITH A+ CERTIFICATION TRAINING

3 UNITS - 36 Lecture Hours, 54 Lab Hours

Intermediate principles and practices of personal computer systems maintenance, upgrading and repair with an emphasis on preparation for A+ Computer Technician Certification administered by CompTIA. Contents include hardware and operating system setup, adding peripherals, communication and networking fundamentals, disaster recovery and supporting the Windows Family of operating systems. Field trips are not required. Not repeatable. (A-F or P/NP)

CMPET 214—MICROPROCESSOR PROGRAMMING & INTERFACING

3 UNITS - 36 Lecture Hours, 54 Lab Hours

Introduction to the microprocessor and micro controller. Topics include tri-state buses, memory, input/output (I/O) ports, address decoding, assembly, and high-level language programming, addressing modes, logical and mathematical operations, branching, loops, subroutines, interfacing, interrupts, and troubleshooting techniques. Students design hardware, software, and interfacing circuitry for micro controllers. Emphasis on interfacing to electronic hardware and software simulation and development on personal computers.

CMPET 269—NETWORKING DEVICES & SYSTEMS

1 UNIT - 54 Lab Hours

This course employs hands-on laboratory activities to explore computer networks, network devices, and the "Internet of Things".

New Core Courses

These courses will be replaced and updated with 4 new core courses which cover the same topics but in a simpler and more logical order. The new courses will be:

CMPET 311 – Technology Support Fundamentals 1 (2.5 units)
CMPET 312 – Technology Support Fundamentals 2 (2.5 units)
CMPET 313 – Technology Support Fundamentals 3 (2.5 units)
CMPET 314 – Technology Support Fundamentals 4 (2.5 units)

Certification Skill Lab Courses

The program will also include 4 new lab courses which will be based on the Skill USA Local, State, and National Computer Services and Networking Competitions. These courses will allow students to earn credits for participating in the Skills USA competitions while earning credits for Computer and Information Technology Industry Certifications. They will also allow students to convert previously earned certifications into college units by means of Credit for Prior Learning (CPL). These courses will be:

CMPET 321 – Certification Skills Lab 1 (1 unit)
CMPET 322 – Certification Skills Lab 2 (2 units)
CMPET 323 – Certification Skills Lab 3 (3 units)
CMPET 324 – Certification Skills Lab 4 (4 units)

New Program Awards

The existing Computer Electronics Program includes a certificate award called the Computer Electronics Certificate and the Computer Electronics A.S. Degree which both include the above core courses plus electives from Computer Electronics, Electronics, Computer Science, and and Machine Tool Technology. The Computer Electronics A.S. Degree is the same as the Computer Electronics Certificate with addition of the general education requirements. Students who complete the Computer Electronics Certificate earn a total of 30 units of college credit. Students who complete the Computer Electronics A.S. Degree earn a total of 60 units of college credit, including 30 units from the generation education requirements.

It is is proposed 2 new awards be added which provide smaller steps toward the Computer Electronics Certificate and the Computer Electronics A.S. Degree. The *Computer Support Technician (Level 1) Certificate* will earn 10 units by completing the four core course (CMPET 311-CMPET 314). The *Computer Support Specialist (Level 2) Certificate* will build on the Level 1 certificate by earn an additional 10 units by completing the Certification Skills Lab courses (CMPET 321-CMPET 324) for a total of 20 units in which the students will participate in preparation for the Skill USA Computer Technology Competitions while preparing for IT certifications from CompTIA, Google, and other certification organizations.

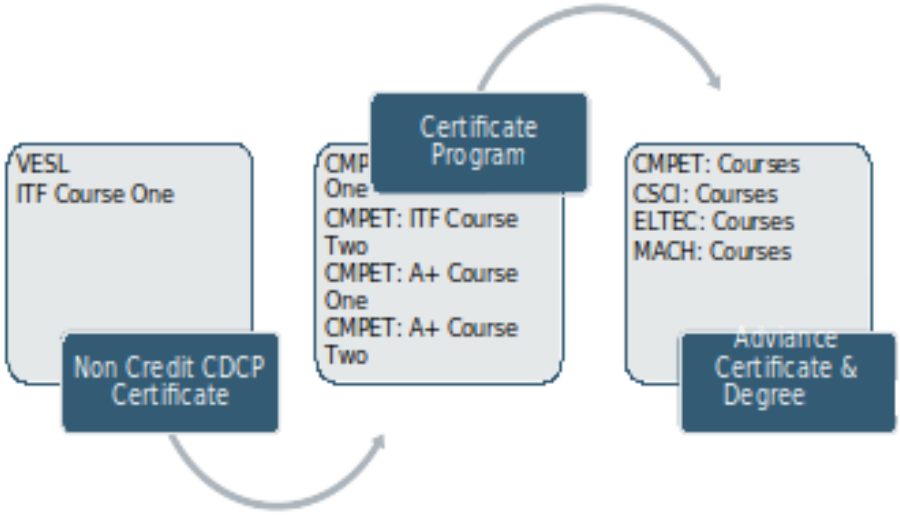
Attendees discussed and agreed with the general design.

Recommendation: Proceed with development of new program design.

Feedback:

The program is aligned with “recognized industry certifications”, is being delivered through “accelerated 7-week classes” and is offered with great flexibility through “asynchronous course formats” using the college Canvas Online course system. In addition, MJC Computer Electronics is partnering with Stanislaus County Office of Education, Second Hand Computing and the Stanislaus County Workforce Development Department in developing a multi-faceted learning ecosystem for students. Below is a basic structure of leveraged resources:

- **Outreach and Recruitment:** CAEP, SCOE Comeback Kids, MJC Campus Recruitment, Stanislaus County ETPL
- **Test Out Curricular Costs:** Stanislaus County Office of Education – Adult Education Resources
- **CompTIA Student Testing Reimbursement:** Modesto Junior College – Adult Education & Jobs For the Future Resources
- **CMPET Program and Work Base Student Learning Lab & Maker Space**: Stanislaus County Office of Education Tom Changnon Education Center.
- **Service Learning Computer Work** – Second Hand Computing
- **Work Experience**: MJC Career Service Center, Stanislaus County Office of Education, Stanislaus County Workforce Development (OJT and Internships), and Local Industry



Recommendations

[1] There was input requesting programs also recognize the importance of customer service, written and verbal communication and team skills. The industry relies heavily on supporting project management teams, CSRs, and Sales in servicing clients. [2] The college may be able to negotiate “learning credits” for some of their technology purchases usable for staff and/or students for more specific software not taught by the college in CMPET or CSCI classes. This provides the opportunity for the student to continue to develop beyond the base program.

Additional Feedback and Discussions

There is presently a heavy need for Cisco. Further, exposure to Moraki and HPE. Beyond technical skills there are many opportunities that do not rely heavily on the deep understanding of computing support, technical or programming skills. Individuals need to know enough but these positions support sales, project management and customer care and development side of the house.

Work Experience Update

Dejeune reported that her MJC Career Services Center Team has the first group of students identified for internship and work experience opportunities. MJC Career Services Center has been working with Dallas Plaa (Stanislaus COE) to link students to with employers.

SCOE/MJC Computer Electronics Learning Lab and Maker Space Update

- Jose Cazares is leading this effort for Modesto Junior College. Goal to formally open for use Fall 2021.
- Lab Uses Includes: Painting of internal walls and acquisition of new furniture and equipment for student to have the opportunity to work common computer technology components and/or have a place to work from, if needed, for work or internships.