

CTE Program Review Summary

April 2012

As Dean of CTE (Career & Technical Education, which includes East Campus programs, formerly ITT Division, as well as the Business Division) I assumed this role in January 2010. CTE (East Campus programs, formerly ITT Division) was scheduled for a program review. Under the new administrative structure Amarillo College no longer had Division Chairs, but rather had moved to a Dean structure. As such, I asked the former Division Chair when the previous Program Review had been conducted. He responded that a Program Review had been completed several years prior but had been rejected as insufficient. From all indications a Program Review has never been completed and accepted for CTE East Campus programs (formerly ITT Division). Another observation would indicate to me that the former Division Chair most likely attempted to complete the Program Review that was rejected entirely on his own with little or no input from Program Coordinators.

With the development of the CTE Academic Division several changes occurred; Automotive, Diesel, and Auto Collision were all merged into the Transportation Department (until Spring 2012 Professional Truck Operations (PTO) was entirely a Continuing Education program. In Spring 2012 the Amarillo College Curriculum Committee approved five PTO courses as academic, however PTO is not included in this Program Review). As well, Renewal Energy, Instrumentation and Control, and Electronics were merged into CTE. Subsequently, Electronics was divided by discipline. The computer networking portion of Electronics was merged into Computer Information Systems, however Networking is included in this Program Review. The remaining Electronics programs have been incorporated into Renewable Energy and Instrumentation and Control. Subsequently, Renewable Energy is included in this Program Review. Utility Power Worker was established as an academic program and is housed in Manufacturing and under the departmental oversight of Dr. Kim Hays; although within this Program Review it is incorporated into Energy. Safety and Environmental has been deactivated as an academic program (although the classes are taught as part of other programs) and as such is not included in this Program Review.

In all, the following programs are included in this Program Review:

- Aviation Maintenance/Aerospace Manufacturing
- Energy (ESTO, NTKW, IMTO, UPW (Line), INTC, RNEW)
- Fire Protection
- Manufacturing (IMT, MCHN, NDTE, WLDG)
- Transportation (ABDR, AUMT, DEMR)

Over the course of the last five years the following curriculum changes have been approved and made within the CTE Division as pertains to this Program Review:

- Aviation Maintenance/Aerospace Manufacturing
 - 02/22/05 – Deleted General Certificate (AERM.CERT.GEN)

- 10/10/08 – Added and deleted courses to course inventory; added Manufacturing core to the Aerospace Manufacturing Certificate
- 02/27/09 – Course updates
- 03/30/09 – Aerospace Manufacturing AAS added (approved by THECB 12/16/08)
- 09/04/09 – Course updates
- 03/12/10 – Course and program updates
- Energy
 - 11/30/07 – Electronic Systems Technology; deleted CETT 2248 and CETT 2249; replaced with CETT 2449 due to WECM update; delete from CETT.AAS.NT and CETT.CERT.NET effective in the 2008-09 catalog: NT Specialist Option, ITNW 2301 from the General Networking Specialist Option and replace with ITSY 2301, ITNW 2353 and replace with ITSY 2300; delete the following courses due to WECM changes: INTC 1312, INTC 1342, ITNW 1342, ITNW 1300, ITNW 2301, ITNW 2339, ITNW 2353
 - 03/30/09 – Electronic Systems Technology; deleted ITCC 1302, 1306, 1342 and 1346; replaced with ITCC 1401, 1404, 2408 and 2410 due to WECM changes, changes impacted: Computer Information Systems AAS, Electronic Systems Technology AAS, EST – General Electronics Systems Assistant Certificate, EST – Microcomputer Service Specialist Certificate, EST – Electronics Application Specialist Certificate, EST – Networking Technology AAS and Certificate, Electronics Engineering Technology AAS, Electronics Engineering Semiconductor Manufacturing Tech AAS, Instrument & Control AAS, Instrument & Control – Cathodic Protection Certificate, Electronic Instrument & Control Technician, Process Technology Specialist Certificate, Telecommunication Specialist, Robotics Technology AAS and Certificate
 - 09/04/09 – Electronic Systems Technology; updated lecture/lab combinations for: BIOM 2335, BIOM 2339, CETT 2439 and CETT 2449
 - 01/15/10 – Electronic Systems Technology; delete the following courses from the course inventory: CETT 1403, CETT 1405, CPMT 1343, CPMT 1347, CPMT 1349, INTW 2305, INTW 2309, ITSY 2301, ITSY 2341, SMFT 1343, SMFT 2335, SMFT 2343; Add the following courses to the course inventory: CPMT 1443, ITCC 2359, ITSY 1317
 - 01/15/10 – Electronic Systems Technology; update title of CETT.CERT.GEN to Electronics Systems Technology – General Electronics Certificate; update program advisor; delete CPMT 1349 and add ITCC 2359
 - 01/15/10 – Electronic Systems Technology; deleted EECT.CERT.EAS, CETT.CERT.MICR and EECT.AAS.EETSM
 - 01/15/10 – Electronic Systems Technology; CETT.AAS.EST changes: update advisor and program description, eliminate option and list all courses under Major Requirements, delete CPMT 1349, CPMT 1343, CPMT 1347, EECT 2435, INTC 1305 and 4 hours natural science, add ITCC 2359, CPMT 1443 and ITSY 1317
 - 01/15/10 – Electronic Systems Technology; CETT.CERT.NETWORK changes: update title, advisor and program description, delete specialty options, delete CETT 1409, CETT 1425, CPMT 1343, CPMT 1347, CPMT 1349, ITNW 2305, ITSY 2301 and ITSY 2341, add CPMT 1443, ITCC 2359 and ITSY 1317

- 01/15/10 – Electronic Systems Technology; CETT.AAS.NT: update title, advisor and program description, delete specialty options, delete 4 hours natural science, CIS elective, CETT 1425, CPMT 1343, CPMT 1347, CPMT 1349, ITNW 2305, ITSY 2301 and ITSY 2341, add CPMT 1443, ITCC 2359 and ITSY 1317
- 11/19/10 – Electronic Systems Technology; delete the following courses from the course inventory: BIOM 2335, BIOM 2339, CETT 1341, CETT 2189, CETT 2289, CETT 2389, ENTC 1301, ENTC 2301, PTAC 2438; add RBTC 1305 and 1343 to course inventory; delete prerequisites from: CETT 2439, EECT 2439, INTC 1348, INTC 1350, INTC 1358, INTC 2336; add prerequisites to: ITCC 1404, ITCC 2408, ITCC 2410; update the prerequisite for CETT 1329, CETT.CERT.GEN: delete CETT 1341 and add STEM Core; CETT.AAS.EST: add STEM Core; update Electronics Engineering Technology Degree (EECT.AAS.EET)
- 03/11/11 – Electronic Systems Technology; updated prerequisites for ITCC 1404, 2408 and 2410
- 10/28/11 – Electronic Systems Technology; deleted ITSY 1317 and added ITSY 2317 in CETT.AAS.NT, CETT.CERT.NETWORK and CETT.AAS.EST
- 02/03/12 – Electronic Systems Technology; moved EST Networking AAS (CETT.AAS.NT) and Certificate (CETT.CERT.NETWORK) to CIS department
- 11/30/07 – Instrument and Control Technology; change title of INTC 1305 from Introduction to Electronic Instrumentation to Introduction of Instrumentation, add INTC 1350, delete INTC 1312
- 03/12/10 – Instrument and Control Technology; deleted CSIR 1355, EECT 2433, EECT 2435, INTC 1301, INTC 1315, METL 2301, METL 2305, METL 2341, deleted INTC.CERT.CATH and CETT.CERT.TEL, updated INTC.CERT.EICT: change program title to Electronic Instrument and Control Technician Certificate, delete INTC 1301: Principles of Industrial Measurement, delete INTC 1315: Final Control Elements from the program, add EECT 2439: Communication Circuits, add METL 1313: Introduction to Corrosion, add LOTT 1301: Introduction to Fiber Optics, increase the Total from 38 to 42 semester hours, updated CETT.AAS: update the program description, delete 3 hours of Natural Science, delete CETT 1403: DC Circuits, delete CETT 1405: AC Circuits, delete INTC 1301: Principles of Industrial Measurement, delete INTC 1315: Final Control Elements, delete CETT 1329: Solid State Devices, delete CETT 1341: Solid State Circuits, delete CSIR 1355: Industry Certification, delete EECT 1380: Cooperative Education, delete EECT 1391: Special Topics, delete EECT 2433: Telephone Systems, delete EECT 2435: Telecommunications, add CETT 1409: DC-AC Circuits, add METL 1313: Introduction to Corrosion, add QCTC 1303: Quality Control, add EECT 2439: Communications Circuits, add LOTT 1301: Introduction to Fiber Optics, list all courses under Major Requirements and eliminate Instrument and Control Technology option and Telecommunication Technology option, increase Major Requirements from 18 to 48 Semester Hours,
- 11/19/10 – Instrument and Control Technology; update program title for INTC.CERT.EICT and delete CETT 1345, add STEM core to INTC.CERT.EICT and CETT.AAS, delete PTAC 2438 and add STEM core to INTC.CERT.PT, replace ENTC 1301 and 2301 with RBTC 1305 and 1343, add STEM Core to CETT.CERT.RBTC and CETT.AAS.RBTC

- 09/16/11 – Instrument and Control Technology; updated INTC 2339
- 11/07/08 – Renewable Energy; added CETT 1409 and WIND 1300 to course inventory
- 12/15/08 – Renewable Energy; received approval from CoBoard to add RENEW.AAS, RENEW.CERT.WIND.BAS and RENEW.CERT.WIND.ADV
- 03/30/09 – Renewable Energy; received approval from Academic Affairs
- 01/15/10 – Renewable Energy; add WIND 1302 to inventory, update advisor to Trace Megenbier; RENEW.AAS; delete EPCT 1307, ELMT 1305, add WIND 1302, reduce semester hours to 63, RENEW.CERT.WIND.BAS; delete ELMT 1305, EPCT 1307, ELMT 2341, add WIND 1302, IEIR 1343, RENEW.CERT.WIND.ADV; delete ELMT 1305, EPCT 1307, ELMT 2341, add WIND 1302, IEIR 1343
- 11/19/10 – Renewable Energy; replaced IEIR 1343 with IEIR 1310 and added STEM Core to RNEW.CERT.BWND, RNEW.CERT.AWND and RNEW.AAS
- 10/07/11 – Renewable Energy; added ENER 1350, HART 1311, ELMT 1402 and HART 1393 to course inventory; AAS: Replaced SPCH 1318 with any speech, replaced MATH 1314 with MATH 1332 or any math, deleted ELMT 2380, added EECT 2439 and LOTT 1301, increased hours from 63 to 64
- 10/28/11 – Renewable Energy; replaced WIND 1300 with ENER 1350 in the RNEW.CERT.BWND, RNEW.CERT.AWND and RNEW.AAS, added RNEW.CERT.BSLR and RNEW.CERT.ASLR, added options to RNEW.AAS to accommodate wind and solar
- 11/19/10 – Utility Power Worker; approved request to pursue an Electrical Lineman program, approved addition of Electrical Lineman certificate program and associated courses, updated program title from Electrical Lineman to Utility Power Worker
- 01/21/11 – Utility Power Worker; approved addition of Electrical Lineman certificate program and associated courses, updated program title from Electrical Lineman to Utility Power Worker
- 10/28/11 – Utility Power Worker; added local need courses ELPT1371, LNWK 1371 and LNWK 1471, updated curriculum to include local need courses, ELPT 1321 and ELPT 2323, added CVOP 1205 and CVOP 1301 to curriculum and increased total hours
- Fire Protection
 - 02/24/06 – Program and course updates
 - 03/24/10 – Added and deleted courses in the course inventory; updated AAS degree
- Manufacturing
 - 02/29/08 – Industrial Maintenance; added Manufacturing core and updated courses in AAS degree and Certificates
 - 03/24/10 – Machining; added Certificate to program inventory
 - 02/24/06 – NDTE; addition of courses, added 3 certificates
 - 02/29/06 – NDTE; addition of Manufacturing core and course updates in AAS degree and 3 Certificates
 - 06/18/09 – NDTE; course updates in AAS and 3 Certificates
 - 02/03/06 – Welding; updated courses
 - 02/29/08 – Welding; updated courses in Certificate

- 03/13/09 – Welding; replaced two level 1 Certificates with one Level 2 Certificate, added courses to course inventory
- Transportation
 - 02/24/06 – Automotive; added and deleted courses in course inventory, updated AAS degree (Power Train Certificate and Chassis & Body Certificate), deactivated Diesel Fuel Systems Certificate
 - 10/13/06 – Diesel; course and program updates

While each department within CTE has its own purpose statement, CTE has adopted the overall mission statement of: *Strengthening the backbone of American industry through Career & Technical Education*. This seems to fit the totality of each program offered at Amarillo College within CTE and has appealed to our business and industry partners.

In the following pages the reader will find individual Program Review documents for Aviation Maintenance/Aerospace Manufacturing; Energy (ESTO, NTWK, IMTO, UPW (Line), INTC, RNEW); Fire Protection; Manufacturing (IMT, MCHN, NDTE, WLDG); and Transportation (ABDR, AUMT, DEMR). Therefore this summary will only touch on findings extrapolated from each of the individual documents and then generalize them to CTE as a whole. As a note, the Program Review document has proved difficult to work with, format, and enter data; for instance, under *Section II. Program's/Department's Improvements based on Planning, Evaluation and Assessment; J.) Do students/graduates in this program/department have to be certified or licensed*; this question does not want to save the answer, whether Yes or No.

Beginning in January 2010 CTE was lead through a strategic planning phase and a subsequent CTE Strategic Plan was developed and put into motion. Part of the plan called for the consolidation and relocation of certain programs and the renovation of current facilities on East Campus (now known as CTEC – Career & Technical Education Center) as part of the current Bond Projects. Building W will be re-serviced and therefore Welding will move to the Manufacturing Complex (Building V). To make room, Safety and Environmental offices have been moved to Building L. Eventually Safety and Environmental labs will be housed in vacated space within Building W. The Aviation program housed in Building W is being moved to a renovated area in Building S. Within Building S Automotive and Diesel will share a bay, a wall is being constructed in the opposite bay and the Aviation lab will be housed on one side and Collision will be housed on the other. The collision building is being taken out of service. Aviation, Automotive, Diesel, and collision (all Transportation disciplines) will share classroom space and resources within Building S. Along with a bay being divided, Building S is also having new restrooms and student/faculty lounge constructed. Plans call for Renewable Energy to move to Building V, thus opening Building T for program incubation and for use as an all-purpose building. Building T has just undergone restroom renovations and shares space in Building S. The Student Activity Center now houses CTE administrative offices, the CTE advisor, Assistance Center, and the CTEC Learning Center (Gear Up is also housed in the SAC but it is not a CTE program).

Changes can occur abruptly, all at once, or in waves. Regardless, there is always a period of transition associated with those changes. January 2010 brought substantial changes to the ITT Division as it was merged with the Business Division to form CTE (Career & Technical Education). With the change brought a change in leadership from an ITT Division Chair to a Dean over all CTE. The former ITT Division Chair assumed new responsibilities associated with the program consolidation and building renovations occurring on the CTEC campus, while continuing to teach his required load. This change in itself is still being felt throughout the campus as decisions are being made, who people turn to for guidance and leadership, and residual effects from previous leadership. A similar change occurred when the existing Department Chair for Transportation was replaced with a Program Coordinator. The former Department Chair has worked to subvert all attempts at progress since that time and his actions are being documented. This has served to slow the entire process and cause a rift within those programs. However, both changes were needed and the benefits are far outweighing the negative reactions.

Since January 2010 Renewable Energy, Instrumentation and Control, and Electronics has been merged with CTE. The former Division Chair for those areas has retired and subsequently taken the position of Dean of CTE at Frank Phillips College. A new Program Coordinator was named and each of the programs are being evaluated and adjusted to affect a stronger curriculum that works collaboratively with similar existing CTE programs. Utility power Worker was also added as a program, and while the program is housed in building V (Manufacturing) and under the departmental leadership of Dr. Hays, it is eventually going to be under the umbrella of Energy, which will include UPW, Wind, and Solar. Therefore, in this document UPW is under the Energy Program Review. Safety and Environmental has been deactivated due to low graduation rates but the courses still are offered as they are a part of most existing programs.

Other items of interest revealed from the individual Program Reviews indicate that there is a lack of understanding on how to access data and use it appropriately. Some of this is due to new leadership in some areas. Other frustrations center on the out datedness of the data. In conjunction, there is little understanding of the value of PET forms, how they can be used as a continuous assessment tool as well as a programming tool, nor how they can be used as a budgetary tool.

One of the values that have surfaced from this Program Review has been a professional development tool of sorts as new CTE leadership has been immersed in the process, enabling them to have a better grasp of Program Review, PET forms, and budgets. The process has also reinforced the importance of Advisory Committees as preparers have used Advisory Committee minutes in their preparations. As a side, a formal Advisory Committee tracking and accountability plan has been put in place for all of Amarillo College stemming from CTE. The Executive Secretary for CTE is responsible for this process under the direction of the Dean CTE.

Another value has been the re-examination of pre and co requisites for CTEC programs. The Program Review has prompted each program Coordinator to evaluate hindrances to student success, which include pre and co requisites, testing, remedial coursework, curriculum, and delivery options. While no substantial changes have occurred as of yet, discussions are occurring which should prove to enhance

student retention and graduation rates. These discussions include conversations with AC's developmental education faculty and staff.

Since the programs within CTE are lab intensive faculty use a traditional teaching style. They generally move back and forth between lab and classroom, thus applying in the lab what was just covered in the classroom. Additionally, many of our programs operate on an 8 week semester thus allowing students to move more quickly through their programs. Transportation can actually have as many as six different classes within an 8 week semester. Student numbers in CTE programs have remained fairly consistent over the years; however, not much effort has been put into marketing specific programs or increasing enrollments in applicable programs. The challenge is attracting students while not over populating the market with no job opportunities for our graduates. CTE programs try to balance industry demand and job opportunity with enrollment.

Antiquated equipment is a major concern revealed in the individual Program Reviews. Again, due to the hands-on nature of the programs equipment and facilities are top priorities for which most faculty and Program Coordinators feel Amarillo College has not invested in enough. Although CTEC is beginning renovations, buildings are in bad repair and still wear the markings of TSTI days. The one positive has been IT's interest and investment in bringing CTEC onboard with technology.

One of the challenges involved in many CTE programs is the availability of qualified faculty, whether full time or part time. While some of our faculty does not have advanced educational degrees beyond an Associate's Degree or Bachelor's Degree, they all possess highly advanced industry certifications and experience. Many are working on advanced degrees to complement their industry expertise. Regardless, all are passionate about their disciplines and invest many hours outside the classroom and lab to ensure the best instructional and training environment possible. Many fund parts of their programs on their own as there simply are not enough resources to provide for the quality education they seek to deliver.

The process of Program Review holds value and whether participants in the endeavor recognize it or not they each have taken away insight into their respective programs they may not have considered previously. While the computer based entry was cumbersome and uncooperative at times, and the data outdated in many cases, the process was still useful. Data for CTE programs that is more than two years old is outdated as CTE, over and above most other academic divisions, is based on industry need and our responsiveness to that need. As a division CTE needs to develop a method of tracking data internally that is current and easily accessed to make better decisions. Many times it is difficult to be as responsive as needed to industry due to lack of research and development funds. Programs can develop and end abruptly within CTE, which is the very nature of this type education. While many are foundational to an industry, specialties arise that Amarillo College must continue to be responsive to for the sake of our industry and community partners, such as Amarillo Economic Development Corporation.



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