

**Embedded Academic Credit in CTE Programs
Update & Lesson Example
ACTEaz Summer Conference
July 2016**

WELCOME! Here are just a few examples of high-quality CTE programs offering Embedded Academic Credit (Math, Economics, Science), how they deliver their curriculum (satisfy the HQT component), and how they got their programs started. Please contact me if you wish to get a program started in your school or district!

TEAM TEACHING

- **David Damiani & David Class (Automotive Technologies/Math) – Mountain View HS, Marana USD**
 - Method of Delivery – This TEAM TEACHING method works very well for Mountain View HS in the 3rd Year Auto Program. In this 2-hour block, David Class teaches the Mathematics during “0” Hour and David Damiani covers the Automotive curriculum during “First” Hour. Marana Mountain View has successfully offered 4th year Math credit for 5 years. Math teacher paid by CTE
 - David Damiani completed the Math in CTE training to prepare himself and his program to offer a 4th year Math credit, and is heavily involved in the Embedded Academics Crosswalk program, as well as CTE Standards Validation and Assessment Update Sessions. D.J.Damiani@maranausd.org

TURN TEACHING

- **Ana Danehy & Joshua Warren (BMAS/Math) – Sunnyside HS, Sunnyside USD**
 - Method of Delivery – This TURN TEACHING method works well for Sunnyside and their “Academy” approach, where students choose an Academy and take classes with other academy cohorts in the same buildings. The curriculum and assessments relating to mathematics are created as a team. On the days of heavy math, Joshua will teach the mathematics concepts for part of the class, and Ana will take over the BMAS portion, while making the connections between the Math concepts and the BMAS application of the concept. Sunnyside BMAS has successfully offered 4th year Math credit for 4 years.
 - Ana and Joshua completed the Math in CTE training to prepare himself and his program to offer a 4th year Math credit, and are heavily involved in the Embedded Academics Crosswalk program, as well as CTE Standards Validation Sessions. AnaD@susd12.org

CO-TEACHING

- **Jerrad McMurrich (Automotive Technologies/Math) – Flowing Wells HS, Flowing Wells USD**
 - Method of Delivery – The CO-TEACHING method has worked well at Flowing Wells HS. The Mathematics Dept. Head is the “Math Co-Teacher,” who meets with Jerrad before major units, and assists with any questions that may arise, while Jerrad (CTE teacher) actually delivers the classroom lessons. The Co-Teacher has “significant input” in the math curriculum and may help design lessons and assessments, and as in Jerrad’s case, also helps design a pre-test and post-test administered in order to show student growth in mathematics. Flowing Wells has successfully offered 4th year Math credit for 4 years.
 - Jerrad McMurrich is one of our qualified Math in CTE Cohort instructors, trained to deliver the NRC CTE (National Research Center for Career and Technical Education) system, a nationally researched model for delivering Mathematics embedded within CTE programs. Jerrad.McMurrich@fwusd.org

- **Allen Foster (Architectural Drafting/Math) – Chino Valley HS, Chino Valley USD**
 - Method of Delivery – Chino Valley HS has chosen the TEACHER-OF-RECORD method for this program that will begin this coming school year. 2015-2016 will be the first year they will offer 4th year Math credit.
 - Allen Foster completed the Math in CTE training in 2014-2015 along with his Math partner, Matt Dunn. Then CTE Director, Rick Bradshaw, also attended each Math in CTE session to ensure integrity and quality in the program, become more comfortable and familiar with the process, as well as gain credibility, in order to receive approval from their local school board to offer the 4th year Math credit, which was recently granted. afoster@chinovalleyschools.com

PODCAST (Automotive Tech Only)

- **Arthur Basurto & Lee Jessen (Automotive Technologies/Math) – Sunnyside HS, Sunnyside USD**
 - Method of Delivery – Sunnyside uses the PODCAST, combined with a TEACHER-OF-RECORD for a very innovative and impressive system. Lee delivers the Math concepts via podcast, designed for the Automotive Program, and Arthur facilitates the lesson in his classroom. The podcast and the teacher in the classroom interact with the students, as if the Math teacher were in the room! Arthur is there to play and pause the podcast when needed (or prompted), check for student understanding, and either compliment the podcast with his own instruction, or continue to move ahead when students are ready.
 - Arthur Basurto, a 26 year veteran teacher, also worked with the Math in CTE program, helped develop the podcast system, and piloted the Automotive podcast method, before offering credit in his Automotive Technologies program. ArthurB@susd12.org
 - Lee Jessen, Integrated Academic Specialist at Pima JTED, is our Lead Math in CTE Instructor for professional development. Lee is trained in the NRC CTE nationally researched method for extracting High School-level Mathematics concepts from the CTE curriculum. Lee has been with the Math in CTE movement in Arizona from the beginning, during her teaching career at Flowing Wells HS, and is very happy to share her expertise with anyone wishing to enhance their Math instruction! ljessen@pimajted.org

DUAL CERTIFICATION (Marketing Ed. /Economics, Agricultural Ed. /Science)

- **Steve Mulhearn (Marketing/Economics) – University of Arizona/ADE/CTE**
 - Many Marketing and Ag. teachers are DUAL CERTIFIED; therefore have no problems fulfilling the HQT requirement on their own. Look for our **ECONOMICS** training next summer! This one-week workshop is designed to train teachers in the AZ High School Economics standards and is a valuable tool in preparing teachers to sit for the Economics exam for certification. Many teachers easily passed the exam after taking this course in June 2016.
 - Steve Mulhearn offered Economics credit in his first year of Marketing Ed. Curriculum was aligned to the AZ High School Economics Standards and an end-of-year, district-wide assessment (the Economics Assessment equivalent) administered. Marketing students consistently scored at or above the level of the traditional Economics students on the assessment. Some districts offer the Economics credit after 1 course, while others require completion of 2 courses in order to receive the credit. Steve.mulhearn@azed.gov
 - All 7 Agricultural Ed. Programs are eligible for Science Credit, as the first 2 courses for all programs are the same, and credit is granted after those first 2 introductory courses.