



# Embedded Credit TOOLKIT



A resource guide for Career Center directors, comprehensive high school administrators and teachers considering implementation of embedded credit courses.

Published July 2006.



# **Missouri Embedded Credit Toolkit**

## **Missouri Center for Career Education**

T.R. Gaines 302  
Central Missouri State University  
Warrensburg, MO 64093  
ph (660) 543-8768  
fax (660) 543-8995

Development project funded by:  
Missouri Department of Elementary and Secondary Education  
Division of Career Education  
Jefferson City, Missouri  
2006

The development of the materials presented in this manual was supported in whole or in part by funds from the Department of Elementary and Secondary Education, Division of Career Education. However, the opinions expressed therein do not necessarily reflect the position or policies of the Missouri Department of Elementary and Secondary Education or the Division of Career Education, and no official endorsement should be inferred.

## Acknowledgements

This toolkit is a product of the Missouri Center for Career Education (MCCE) made possible through funding provided by the Department of Elementary and Secondary Education, Division of Career Education. The contents reflect the efforts of many educators from across the state who were willing to ask questions, voice concerns, and share their experiences on the subject of embedded credit. These educators, representing high schools and area career centers, attended multiple meetings, provided sample documents, and offered descriptions of local embedded credit processes and outcomes. In addition, they determined essential components to be included and provided feedback throughout the development of this toolkit. With sincere appreciation, MCCE acknowledges the time, effort, and expertise of each teacher, counselor, and administrator who contributed to this embedded credit resource.

### Embedded Credit Leadership Committee

Abel, Lester	Moberly Area Technical Center
Alford, Nancy	DESE
Briggs, Regenia	Hillyard Technical Center
Caughron, Jayme	Grand River Technical School
Frederking, Kathy	Lewis & Clark Career Center
Harden, Dennis	DESE
Headrick, Nancy	DESE
Holcomb, Gail	Lebanon Technology and Career Center
Hopkins, David	North Callaway County
Linthacum, Larry	North Central Career Center
McGregor, Roger	Hannibal Career and Technical Center
Payne, Rich	Cape Girardeau Career & Technology Center
Reynolds, Mike	Howard County R-II
Roberts, Don	Excelsior Springs Area Career Center
Ruhman, Dave	Arcadia Valley Career Technology Center
Spencer, Jim	Cass Career Center
Wells, Richard	Clinton Technical School
Wolf, Ron	Grand River Technical School



## Table of Contents

<b>DESCRIPTION</b>	<b>PAGE</b>
Executive Summary .....	1
Definition and Characteristics of Embedded Credit .....	4
Goals .....	5
DESE Guidelines and Contact Information .....	6
DESE Application Information.....	8
Quick-Start Timeline .....	9
Implementation Guidelines .....	10
Effectiveness Measures.....	26
Appendices	
Embedded Credit School Profiles.....	A
Arcadia Valley CTC .....	A
Cass Career Center.....	B
Cape Girardeau CTC.....	C
Lebanon TCC.....	D
Contact List for Embedded Credit Implementation.....	E
Glossary .....	F
Frequently Asked Questions.....	G

## Executive Summary

While several Missouri schools have engaged in embedded credit endeavors for some time, the concept is not widely developed or endorsed; consequently, implementation has occurred in only isolated instances across the state. As a result of increased graduation requirements, embedded credit has recently become more widely recognized by career educators as one means to ensure students have the opportunity to complete both a rigorous core of academic and technical coursework. In addition, embedded credit offers an economical solution to the cost of increased graduation requirements for the local high school. Although this toolkit was initially intended for administrators of area career centers, it became apparent as development progressed that any educator can use the procedures and experiences described in this resource. Thus, the purpose of this toolkit is to assist all secondary educators in their efforts to develop and implement embedded credit courses.

Anticipated outcomes for implementing embedded credit courses seem to revolve around two main objectives:

- Ensure Missouri students have continued opportunities to take a rigorous academic core and high quality career preparation courses; and
- Prepare students for college and a career by improving their academic achievement and reducing the drop out rate.

These two outcomes are specifically relevant to accountability requirements of the Missouri School Improvement Program (MSIP) as well as accountability requirements of federal Perkins funding for career education programs.

It is important, however, to understand the toolkit is not intended to provide a recipe for creating embedded credit courses. Instead, this resource documents the practices and observations of those who have been involved in the embedded credit design process. The contents are intended to save educators time during the steep learning curve from exploration to implementation. Experience has demonstrated that a variety of process models may be followed. The success of an individual school's plans will be highly dependent upon local expectations and the extent to which the experiences and documents in this toolkit are utilized.

The complete toolkit consists of this booklet and an accompanying CD which contains support materials, forms, and other documents provided by area career centers who have implemented embedded credit. Permission has been obtained from each of the contributors to include their materials as a part of the toolkit. The CD contains the materials available at the time of

development and in no way exhaustively represents all materials needed for implementation. The amount of the resource materials included on the CD is voluminous. Attempts have been made to streamline the manual and CD contents for ease of use. However, most of the materials are regarded as critical to successful development and implementation of an embedded credit course and cannot be removed without jeopardizing the integrity of the toolkit. Since the CD includes many of the resources that would be collected during a site visit or visits, the resulting time savings can be utilized to focus on the development and implementation processes.

In addition to providing materials and specific examples of embedded credit methods, three models of implementation have been identified.

Model 1, the Arcadia Valley Workforce Development Model, is based on attainment of Career and Technical Education (CTE) competencies. The CTE course/program is regarded as the host for embedded academic competencies, and the embedded competencies are dependent upon the CTE competencies. Embedded competencies are not grade specific.

Model 2, the Rigor, Relevance, and Relationship Model, uses the Missouri Curriculum Frameworks as the basis for aligning CTE competencies. It is in fact the opposite of the Arcadia Valley approach. The embedded competencies are grade specific, as they are derived from the curriculum frameworks and not the CTE competencies. This model assumes students have prior knowledge of grade-appropriate competencies.

Model 3, the Cass Career Center Portfolio Model, is specific to language arts. The assignments are integrated into the curriculum of the CTE/host course; however, students are required to complete many of the assignments outside of the host class time in order to receive embedded credit.

A review of embedded credit practices in other states and in additional Missouri sites indicate there are multiple models used to create and deliver embedded credit coursework. One common thread running through all models is the necessity to involve all parties in the course development. Because embedded credit courses cross curricular areas, cooperative involvement is critical if students are to gain the necessary competencies from both the host and embedded credit course content.

In addition to developing the course curriculum, materials, and assessments, there are a number of external factors to be considered. For example, careful consideration should be given to appropriate course names to help ensure students who earn embedded credit will be able to meet college admission requirements. Competencies may be integrated into class time, or they may be

addressed through additional time allotted for pull-out instruction. As indicated by DESE guidelines, the embedded credit content should align closely to standards appropriate for the course and/or grade level. In the event courses are being articulated, it may be necessary to create a bridge course covering the postsecondary course competencies not included in the embedded credit course/content. Recognizing that embedded credit course development involves more than curriculum alignment and student assessments is critical to program success.

As embedded credit courses are fairly new to most Missouri school districts, the Department of Elementary and Secondary Education is developing policies and guidelines to assist schools in the design and implementation processes. Suggested guidelines, recommended language to be included in the latest *Missouri Graduation Handbook*, and Embedded Credit Application Information are included in this manual. The application information is intended as a mechanism to notify DESE officials of a district's intent to offer embedded credit coursework. In addition to the application form, the guidelines and suggested Handbook content may be used until the Department further defines processes and required documentation.

A contact list is included in the toolkit. Listed are individuals who have participated in the development of an embedded credit course or in the development of this toolkit. They are an excellent source of information concerning embedded credit.

## **Definition and Characteristics of Embedded Credit**

An embedded credit course incorporates competencies from one subject into another (host) subject and allows students to earn credit for both. In many cases, the competencies may be integrated into class time; however, some may have to be pull-out instruction. Time should be provided to allow students to complete those pull-out competencies. The embedded content should align closely to state standards that are grade appropriate for the course. For example, in Missouri, those standards would be Show-Me Standards, Grade Level Expectations (GLEs), or Curriculum Frameworks.

## Goals

The implementation guidelines and sample materials contained in this toolkit are primarily designed to help area career centers implement successful embedded credit courses throughout Missouri. Despite this specific focus, the techniques, instructional practices and planning activities outlined in this toolkit can be used by any teacher seeking to implement academic integration into career education courses or contextual and/or project-based learning in academic courses. This toolkit assumes a student-centered educational environment. To that end, administrators and teachers are frequently encouraged to look at student data and student performance beyond test scores and grades, often looking to postsecondary education and the workplace. These goals and implementation strategies align well with the 10 Key Practices of the Southern Regional Education Board's *High Schools That Work* program, and all schools looking to implement embedded credit are encouraged to simultaneously review the HSTW 10 Key Practices.

The *High Schools That Work* 10 Key Practices can be viewed at <http://sreb.org/programs/hstw/publications/pubs/outstandingpractice98.asp>

Embedded Credit in Missouri shall:

- Provide students the opportunity to take a rigorous academic core and high quality career preparation courses.
- Maintain the standards of rigor within all subject areas.
- Address high school core curriculum required for admission to Missouri public four-year colleges and universities.
- Prepare students for college and a career by improving student achievement and reducing the drop out rate.

## DESE Guidelines and Contact Information

At the time of this writing, no official statements of policy have been developed or endorsed by the Department of Elementary and Secondary Education. However, the Divisions of Career Education and School Improvement are both highly supportive of the embedded credit concept and have begun collaborations regarding general procedures and anticipated requirements for implementation. As a result, several expectations have been identified that will help guide development of embedded credit options at the local level.

1. **Notification of intent to implement an embedded credit program.** Because DESE is presently concentrating on collecting information that may later be used to inform state-level policy and regulations, it is important that the Department receive notification of local efforts. Embedded Credit Application Information is included as a part of this resource specifically for that purpose.
2. **Reporting and transcribing embedded credit.** It is the Department's position that reporting of embedded credit activities and transcribing of embedded credit awards are separate and discrete subjects. Accordingly, an embedded credit course should be reported in a consistent manner to DESE by local districts as a matter of MSIP compliance. Reporting is expected to be taken care of in Core Data, possibly by creating a standard course delivery code. In contrast, the manner in which embedded credit is transcribed will be left to the discretion of individual districts.
3. **Teacher Certification.** For those schools who embed academic content into a career and technical education program/course, it is not anticipated that academic teacher certification will be required of the respective CTE instructor. Likewise, academic content embedded within a host academic course will not require certification to teach the embedded competencies.
4. **Maximum Embedded Credit Allowed.** Although it is possible that the amount of embedded credit any student can earn may be capped in the future, there is currently no limit set by the Department. The maximum credit awarded is regarded as a local decision so long as students who receive embedded credit meet or exceed graduation requirements.
5. **Separate vs. Substitute Courses.** DESE recommends that courses which reflect the embedded credit content or competencies be established as new, separate courses. Awarding embedded credit for existing courses is not recommended for varied reasons including possible confusion or complications in meeting postsecondary admission requirements.
6. **Competency Assessment.** There are no plans to require a state assessment of competence. Assessments should be developed locally, and only comprehensive competency exams and/or expected performance levels need be included in the

Embedded Credit Application submitted to DESE. Formative assessments and results should be developed and retained solely for local purposes. Although specific criteria have not yet been identified, it is important to note a state-level process for validation of local assessments is in the early stages of development. Most likely, validation will be conducted by a team of “outside” readers and will be linked to various measures of program effectiveness including evidence of rigor and program continuity. The possibility of the Department eventually evaluating program success on the basis of standardized assessment criteria is more than ample reason to establish performance benchmarks and begin data collection at the onset of program implementation.

In addition to these guidelines, the following paragraphs regarding embedded credit have been recommended for inclusion in the pending update of *Missouri’s Graduation Handbook*.

School districts may choose to embed competencies from one subject into another class and award credit to students for both the embedded content and the other subject. The embedded subject and the “host” subject should be closely linked. Embedding mathematics, communication arts, and science credit seems a natural fit in career and technical education.

Because this involves an alternative method for granting credit, school districts choosing to offer embedded credit must obtain prior approval from DESE. Approval will be contingent on the demonstration that the embedded content is closely aligned to the subject in which the content will be taught. The embedded content must align closely to Missouri’s Show-Me Standards and Grade Level Expectations (GLEs) and be rigorous in expectations. Districts wanting to offer embedded credit must also present to DESE a competency assessment plan. The district should indicate what assessment results or level of performance will be used in order to earn the credit.

Area career centers should collaborate with their sending school districts as core curriculum is embedded into career education classes. That collaboration should involve administrators and classroom teachers of the appropriate content areas. The collaboration should also include assessment results or level of performance expectations.

The following personnel at the Department of Elementary and Secondary Education may be contacted for answers to specific questions or for clarification of information.

Ginny Vandelicht, Director  
School Improvement Support, Jefferson State Office Building, 205 Jefferson Street,  
P.O. Box 480, Jefferson City, MO 65102-0480  
ginny.vandelicht@dese.mo.gov  
Phone: 573-526-4885; Fax: 573-526-0651

## DESE Application Information

The following application information has been recommended to the Department of Elementary and Secondary Education and represents a general outline of the information to be submitted in notifying DESE of local intent to implement embedded credit. When developed, Department officials will provide further application/notification requirements.

Application should be directed to the individuals identified in the DESE Guidelines and should include the following:

1. Name of the school district and schools within the district that plan to offer an embedded credit course. If an area career center, list all participating sending schools.
2. Transcribed name of the “host course” for the embedded credit competencies. Identify the number of credits to be given. Attach a copy of the course syllabus and/or curriculum guide.
3. Transcribed name of the course to be embedded. Identify the number of credits to be given. Attach a copy of the course syllabus or curriculum guide.
4. Describe how the courses are closely linked to create an avenue for embedded credit.
5. Describe how students will incur a greater learning benefit from taking the embedded credit course versus taking two non-embedded stand-alone courses.
6. Identify the standards used for alignment and describe how the embedded credit course is aligned to those standards. Attach a copy of the alignment.
7. Describe how student mastery will be assessed.
8. Describe how the district(s) will measure the effectiveness and appropriateness of the embedded credit course.
9. Attach a copy of the minutes of school board approval of the course. If an area career center, a copy of minutes from those districts approving the course is sufficient.
10. Include contact information for a person at each site responsible for supervising the schools' participation in the embedded credit course. The individual named should be the school contact in the event the application reviewer has questions or requires additional information.

## Quick-Start Timeline

This timeline is designed for quick-start implementation. Individual schools may find they need to expand and extend this timeline to meet the needs of staff, host district, and/or sending schools.

April-May	It is important to research embedded credit to understand what embedded credit is and how it will affect districts, schools, and students. Such research may include a review of this toolkit, site visits to view embedded credit programs at established centers, and discussions with other educators to compare and contrast program similarities. A contact list is provided as part of this toolkit. Additionally, see the section on Implementation Guidelines “Doing Your Homework.”
June	Obtain buy-in from staff and host district counselors, administrators, and academic chairs. Discuss embedded credit with postsecondary institutions regarding acceptance of the credit.
July	Obtain postsecondary buy-in.
August-October	Establish a building-level leadership team. Educate this team on embedded credit and insure their commitment. Begin identification process of core academic courses and CTE competencies for credit. Begin development of full proposal to school board and sending schools. Meet with superintendents from sending schools. Choose courses and develop course change for next year. Meet with area career center staff and core academic content representatives from each sending school to discuss embedded credit implementation.
November	Submit course changes to DESE.
December	Continue meetings with area career center staff and core academic content representatives to align curriculum with embedded credit and create lesson plans and assessments.  Meet with local board and other participating school boards to present proposal and obtain approval.
August	Implementation begins.
August-December	Conduct program evaluations.

## Implementation Guidelines

In order to successfully implement an embedded credit coursework in a school, it may be beneficial to become intimately familiar with the school’s curriculum and curriculum change policies. For an area career center, it may be beneficial to review the curriculum and curriculum change policies of the sending schools as well.

Following are some suggested implementation steps that may be considered prior to soliciting cooperation from others to develop and implement embedded credit coursework.

### STEP 1 - Do Your Homework

The benefits of “Doing Your Homework” prior to soliciting support for an embedded credit course cannot be stressed enough. Schools may be able to inoculate their audience against preconceived objections and concerns while developing support for the course change by incorporating the issues and outcomes present in each school’s current curriculum. Samples of various districts policies are incorporated for review in this section. Note that these are samples. Each implementing area career center will need to research its sending districts' policies and become familiar with them.

1. What are the core subject matter credit requirements of the district and/or sending schools' districts? Create a matrix to help see the differing graduation requirements.

<b>Core Requirements in credit/units</b>	<b>Sending School A</b>	<b>Sending School B</b>	<b>Sending School C</b>	<b>Similarities</b>
<b>Mathematics</b>				
<b>Communication Arts</b>				
<b>Social Studies</b>				
<b>Science</b>				

2. Developing a matrix by course and by grade level may assist in comparing offerings. See the example that follows for Mathematics. Determine if there is a clear sequence of courses within the school and whether there are similarities across the schools (by grade level).

	<b>Sending School A</b>	<b>Sending School B</b>	<b>Sending School C</b>	<b>Similar Courses</b>
<b>Grade 12</b>	Calculus All below	Calculus Advanced Industrial Algebra	AP Calculus All below	Calculus
<b>Grade 11</b>	Algebra 3 College Algebra Cadet Math teaching All below	Trig and Math analysis Algebra-Geometry 3 Geometry concepts All below	Finite Math Math analysis AP statistics All Below	A combination of Algebra and Trigonometry
<b>Grade 10</b>	Honors Geometry Honors Geometry Trigonometry Probability and Statistics and Honors All below	Algebra 2 Algebra-Geometry 2 Algebra 1 Concepts	Geometry B And Honors Algebra 2 with Trigonometry Honors	Geometry
<b>Grade 9</b>	Pre-Algebra Algebra 1 Advanced Algebra Algebra 2 Advanced Algebra 2 Honors Algebra 2	Geometry Algebra-Geometry 1 Pre-Algebra	Transition Math Algebra 1A Algebra 1B Geometry A-B and Honors	Algebra

- Once again, a matrix may be beneficial in understanding key differences. Determine if there are major differences in course offerings between sending schools.

	<b>Sending School A</b>	<b>Sending School B</b>	<b>Sending School C</b>	<b>Differences</b>
<b>Grade 12</b>	Calculus All below	Calculus Advanced Industrial Algebra	AP Calculus All below	Limited AP
<b>Grade 11</b>	Algebra 3 College Algebra Cadet Math teaching All below	Trig and Math analysis Algebra-Geometry 3 Geometry concepts All below	Finite Math Math analysis AP statistics All Below	All courses And sequences vary
<b>Grade 10</b>	Honors Geometry Honors Geometry Trigonometry Probability and Statistics and Honors All below	Algebra 2 Algebra-Geometry 2 Algebra 1 Concepts	Geometry B And Honors Algebra 2 with Trigonometry Honors	No consistent treatment of Trigonometry topics
<b>Grade 9</b>	Pre-algebra Algebra 1 Advanced Algebra Algebra 2 Advanced Algebra 2 Honors Algebra 2	Geometry Algebra-Geometry 1 Pre-Algebra	Transition Math Algebra 1A Algebra 1B Geometry A-B and Honors	Wide berth of Algebra options

Other considerations regarding differences:

- Are there tracked options? Some high schools have several “tracks” of core offerings depending upon the students’ postsecondary plans.
- Depending upon the course offered and grade level, schools may want to request how the GLEs align with the courses currently offered. This may assist implementing schools in achieve consistency with the schools’ curriculum delivery strategy.
- Determine if the schools have outcome measures for completers of any core coursework. Pay particular attention to embedding those outcomes in an embedded course credit proposal.
- Develop grade and credit reporting options. Determine whether the embedded credit course will offer only instruction and sending schools will assign the course name, or whether embedded credit will target a particular course?

8. How shall the course grades be reported? Pass/Fail? By letter? Can this affect class rank?
9. Will each embedded course use a one- or two-year model? For example: a two-year program may assign one credit at the end of the senior year. This allows the area career center to preserve technical time; more blocks allow for more instructional time; and students can achieve higher level work and/or make more connections. In a one-year program, one-half credit may be assigned at the end of year one. In one-year courses, students participate for only one year. If your school serves more *first-year seniors*, more students can earn credit.
10. How will assessments be handled? Will assessments be designed as collaboration between the host district teachers, sending school teachers, career/tech teachers or in another manner, possibly using an outside resource such as National Occupational Competency Testing Institute (NOCTI) or ACT WorkKeys?
11. How will embedded credit affect postsecondary aspirations of the students?

## **STEP 2 – Educate Your Area Career Center Staff**

Once an area career center has developed the answers and information outlined in Step 1, it is time to share that information with the staff. If embedded credit is to be successfully implemented, school leadership will need staff buy-in to insure they can successfully assist in increasing the comfort level of the sending school administrators and teaching staff. Following are some questions the area career center leadership team should be ready to answer in order to obtain staff “buy-in.”

- Why should we begin teaching a core subject?
- Won't this reduce the amount of time my students will have to practice their technical skills?
- How will I get my students technically certifiable if I lose instructional time?
- I'm not a core subject teacher and uncomfortable trying to be one. How will I know what to do and how to teach it?
- Will we lose students who come here to avoid taking more core coursework?

### STEP 3 – Involving Higher Education

The involvement of higher education in an embedded credit coursework will add substantial credibility to its acceptance. Some implementing schools have indicated that involving higher education in the instructional design would have been their preferred method as they review the results of their efforts and their plans for the future.

Following are the higher education entities, contact information, and questions that should be considered as a school creates buy-in for embedded credit coursework.

**What postsecondary institutions do the majority of the school's students attend after graduation?** Finding out this information is a good first step in involving the postsecondary institutions in a school's embedded credit course development. What can the postsecondary institutions tell an area career center about the transition status of its graduates? What are the assessments used to determine core course placement for incoming students? Do many school graduates have to take remedial coursework? If so, in what areas? This information can be used as one of the primary reasons to seek the partnership of postsecondary institutions in development of embedded credit coursework. Based upon their experience with a school's students, most postsecondary institutions should be able to identify the core skills students need to have in order to avoid remedial coursework upon entering college. In addition, an area career center may be able to design an articulation agreement that allows students who successfully complete the embedded credit course to receive articulated credit toward a postsecondary degree.

Following is an example of St. Louis Community College's entry requirements for mathematics proficiency. These requirements were obtained from <http://www.stlcc.edu/>.

*Mathematics assessment may be waived if a student can provide one of the following:*

- *an ACT math sub-score of 23 or higher - allows direct placement into MTH:160x - College Algebra;*
- *an SAT math score of 580 or higher - allows direct placement into MTH:160x; or*
- *a college transcript documenting an equivalent math course with a grade of C or higher, completed within the past three years.*

*In addition, some selective admission programs may require additional assessment exams or skills tests.*

*If you cannot document that you have met the alternative assessment criteria noted above, you will be required to take the appropriate placement test(s). Your scores will remain valid up to three years from the semester in which you test; thereafter, you will be required to retake the college's entry assessment.*

**Can embedded credit be offered as dual credit or articulated credit?** When credit is articulated, students receiving articulated credit usually must enroll at the postsecondary institution. Articulation agreements can be local or statewide. After accumulating a specified number of credit hours, the student is given college credit for the secondary coursework that parallels a specific postsecondary course. The articulation between the high school and the college usually specifies the credit and requirements for transcribing. A cost to the student may or may not be involved.

When a student receives dual credit, they are receiving college and high school credit simultaneously. A dual credit course contains and teaches to the same curriculum as the course offered on the postsecondary institution's campus. In addition, a dual credit instructor meets the same staffing requirements and qualifications as the postsecondary institution's staff and is often considered adjunct staff. Usually, students must pay the postsecondary institution's fees to obtain dual credit. The credit is immediately transcribed upon completion of the course.

Embedded credit can be offered under either condition; however, it may be more difficult to offer embedded credit as dual credit unless the CTE teacher can meet the core academic area staffing requirements of the postsecondary institution. It should be noted that in either instance, adding this feature to an embedded credit course elevates the rigor and acceptance of the course. In addition, it may also provide the opportunity to give the course a core subject name.

**What core course names are acceptable as appropriate high school coursework to the universities that the majority of a school's students attend?** It is not unusual for universities who are selective or highly selective in their admissions requirements to require incoming freshmen to have completed certain core academic courses in their high school experience. By reviewing their freshmen admission requirements, a school will find useful information in selecting a name for an embedded credit course. Be aware that Missouri Core Data numbers do assign course names, and a particular course name has an effect on whether a postsecondary institution will recognize the course as appropriate preparation for admission.

For students pursuing NCAA eligibility, counselors should cautiously consider using embedded credit to meet college entry requirements. It is very important to check the course name with the NCAA.

## **STEP 4- Involving Sending Districts**

The process used to involve sending school districts, their high schools, and their core subject matter staff will vary from school to school. Obviously, the first step is to share the vision with the host school district's leadership team. The benefits of this first step will assist the leadership team in solidifying the research and groundwork that has been developed.

Once on board and their questions answered, the next step is to approach your sending school districts' superintendents. Approach them with a process plan. It may be a wise move to include officials from the local community college in the presentation. We suggest the College President or Vice President of Academic Affairs or a similar position. It will be important for the plan to include a process for the involvement of the high school principals and representative chairs of core subject departments.

### **Some Buy in Considerations**

Approach the sending school principals, department heads, and counselors in that order.

Use the support generated by each level to obtain lower level support. For example, in approaching the sending school principal, use the support of the sending school districts' superintendent. Approach a selected core department head with the principal and if possible the sending school superintendent. Approach the guidance department chair with the core department chair and principal.

Use individual meetings. This may seem time consuming, but it will eliminate many barriers that could become turf issues when larger groups of educators are brought together and begin to feel that they lack input into delivery of core content area for their districts' students. We suggest scheduling luncheon meetings rather than after-school meeting. This setting may provide a more relaxed atmosphere for genuine discussions.

Approach the idea of embedded credit as increasing options for students. Avoid discussing the effect that higher graduation requirements will have upon the enrollment at the area career center. Such concerns from an area career center's leadership team will seem disingenuous to the embedded credit effort.

It may seem obvious, but it will be important for a leadership team to be armed with each sending school's student's experiences in remedial education at the local community college. The idea is not to shame a school into participating, but to show how together with their

department and secondary institutions can partner to reduce the remediation rate of students entering postsecondary education.

It is also important to stress to the academic core department chairs that this is a partnership, and their input and expertise is critical.

A PowerPoint presentation on embedded credit offered by the Arcadia Valley Career and Technology Center at the *High Schools That Work* Summer Staff Development Conference is available online at <http://www.av.k12.mo.us/ctc/ecredit.htm> Materials to help area career centers secure buy-in have been included in the supplementary CD. These materials are provided in editable form in order to facilitate implementation at other schools.

## STEP 5 – Other Entities to Consider and Why

Because embedded credit is a new concept in Missouri, there are a variety of stakeholders that may not understand its intent or its benefit to their enterprise. Following is an example matrix of stakeholders that the leadership team may need to educate about embedded credit and sample information to consider providing in the development process.

Entity	Relationship to The Concept	How they Benefit?	How to Communicate?	What They Need to Understand?
<b>Business and Industry Partners</b>	Workers need these skills. No time to train them	Can focus on technical skill training	Advisory Committees	We are listening to your needs and adapting our instruction
<b>NCAA</b>	Specific academic requirements for athletes	More athletes complete education and graduate with a degree	Check appropriate course names on website	Not watered down academics
<b>Certification bodies (such as Automotive Service Excellence-ASE)</b>	Time requirements in technical programs	Student pass rates on certification exams are higher	Check time waiver requirements	Sometimes less technical time is more important in secondary education

## Step 6 - Consider Process Models

Based upon the Missouri Center for Career Education's review of current embedded credit models, three possible approaches to the implementation and delivery of embedded credit coursework have been identified. An individual area career center's choice of any of these approaches is highly dependent on the outcome the school hopes to achieve. This step will attempt to outline those processes, options, and reasons for implementation that schools may wish to consider in the development of embedded credit coursework.

## **Workforce Development Model**

### **“Arcadia Valley Approach”**

In this model, both core subject matter teachers and CTE teachers identify the core subject matter skills and knowledge that students need to know to successfully complete a technical program of study.

#### **The primary reasons for using this method are:**

- Sending school students often lose credit in travel time.
- Increased graduation requirements may cause some students to lose the opportunity to attend a career center.
- The coursework is focused on what students need to be successful in a chosen technical field.
- A primary goal is successful transition to a postsecondary technical program without the need for remediation.
- This model provides a method to meet Carl D. Perkins III requirements for the integration of academics into career technical education.

#### **Considerations:**

- This approach leads to collaboration with sending schools core subject matter teachers.
- This model can be used as a vehicle to assist secondary CTE teachers to “SEE” how to integrate academics.
- Students who lack the core skills to be successful in a rigorous technical program of study can be assisted through this model.
- This approach does not focus on teaching advanced core subject skills.
- It may be considered remedial.
- Little data exists at this time to prove that postsecondary remediation is eliminated.
- It relies heavily on the development of local materials such as instructional videos.
- Instruction in the academic subject is not always integrated with the technical subject matter.
- Depending upon the delivery schedule, it may reduce technical instructional time.

## Implementation Steps:

1. Do your homework by researching the answers to the questions and complete the matrices found on pages 10-13. There are 11 questions to be answered.
2. Educate your staff. See potential staff questions and concerns found on page 13.
3. Share the concept and obtain support with the host district's leadership team.
4. Share the concept and obtain support from the area career center superintendents' council, sending school principals, and guidance counselors.
5. Share the concept and obtain support from postsecondary partners.
6. Share the concept with other stakeholders. See page 19 for those groups and their interests.
7. Identify the academic or subject matter to be offered.
8. Solicit the help of the middle school, high school, and postsecondary teachers whose academic area has been identified for embedded credit. Explain the embedded credit concept.
9. CTE teachers begin identifying core course topics embedded in the CTE curriculums.
10. CTE and academic teachers meet to create practical definitions for each identified concept. Academic teachers assist CTE teachers in identifying, relating, and validating core topics to identified CTE competency topics.
11. Teachers also identify topics not embedded in CTE curriculums that are necessary for students to know and be able to do for MAP and or postsecondary placements tests.
12. Organize an instructional calendar for each topic identified.
13. Agree on credit and grading issues.
14. Create the lessons and study guides for students.
15. Agree on and create an assessment process. Consider types of tests, both pre-tests and final assessments, pass rates, and retake policies.
16. Set goals for student achievement.
17. Develop program evaluation criteria.
18. Implement the program.

## Curriculum Frameworks Model

### “Rigor, Relevance, and Relationships Approach”

This model is similar to the Arcadia Valley's Workforce Development Model where both core subject matter teachers and CTE teachers identify the core subject matter skills; however, the core subject matter skills identified for instruction in this model are tied to the Missouri curriculum frameworks and GLEs for 11<sup>th</sup> and 12<sup>th</sup> grade students, as opposed to re-teaching GLEs from lower grade levels.

### The primary reasons for using this method are:

- Getting high school students to take rigorous core courses is the best way to ensure that all students are prepared for college and careers.
- Research by the American Diploma Project has confirmed that **ALL** graduates need “**analytic and reasoning skills**” that are developed in higher level courses.
- Research by ACT reveals a clear correlation between a score on each ACT subtest and college success in a related course. ACT concludes that taking the essential core is no longer a ticket to success in college and recommends that students take more and higher-level courses in high school.
- Southern Regional Education Board (SREB) recommends a core curriculum to prepare career-bound students for well paying jobs and postsecondary study.
- Sending school students often lose credit in travel time.
- Increased graduation requirements may cause some students to lose the opportunity to attend an area career center.
- The coursework is focused on developing the higher level reasoning skills students need to be successful in a chosen technical field.
- A primary goal is successful transition to a postsecondary technical program without the need for remediation.
- This model provides a method for meeting Carl D. Perkins III requirements for the integration of academics into career technical education.

## Considerations:

- This model leads to collaboration with sending schools core subject matter teachers.
- This model can be used as a vehicle to assist secondary CTE teachers to “SEE” how to integrate academics.
- Data exists to prove that postsecondary remediation is eliminated.
- It relies heavily on the development of local materials.
- It requires significant integration with technical instruction and core teachers.
- Depending upon the delivery schedule, it may reduce specific technical instructional time and increase student collaborative time.
- This model requires a significant amount of professional development and common planning time to implement.

## Implementation Steps:

1. Do your homework by researching the answers to the questions and complete the matrices found on pages 10-13. There are 11 questions to be answered.
2. Educate the area career center staff. See potential staff questions and concerns found on pages 13.
3. Share the concept and obtain support with the host district leadership team.
4. Share the concept and obtain support from the area career center’s superintendent’s council, sending school principals, and guidance counselors.
5. Share the concept and obtain support from postsecondary partners.
6. Share the concept with other stakeholders. See page 19 for those groups and their interests.
7. Identify the academic or subject matter to be offered.
8. Solicit the help of the high school and postsecondary teachers whose core area has been identified for embedded credit. Explain the embedded credit concept.
9. CTE teachers begin reviewing the appropriate curriculum frameworks in grades 9-12 for the subject area that may be embedded in the CTE curriculums. During this review, CTE teachers align their program competencies with the “What students should be able to do” statements found in the frameworks. Go to <http://dese.mo.gov/divimprove/curriculum/frameworks/> to review the Curriculum Frameworks.
10. Academic teachers meet with CTE teachers to assist CTE teachers in identifying, relating, and validating competencies to identified frameworks concepts.

11. Teachers also identify framework topics not embedded in CTE curriculums that are necessary for students to know and be able to do for MAP and or postsecondary placements tests.
12. Organize an instructional calendar for each topic identified.
13. Agree on credit and grading issues.
14. Create the lessons and study guides for students. One possible integrated approach is the Janis Jordan Model, see attachments.
15. Agree on and create an assessment process. Consider types of tests, both pre-tests and final assessments, pass rates and retake policies.
16. Set goals for student achievement.
17. Develop program evaluation criteria.
18. Implement the program.

## **Portfolio Model**

### **“Cass Career Center Approach”**

In this model, both core subject matter teachers and CTE teachers identify the core subject matter skills and knowledge students need to know to successfully compile an integrated portfolio of work that meets those standards. The standards may be selected as a result of a review of the technical curriculum and matched to the appropriate GLEs, or projects may be developed that meet the students’ current grade level expectations.

### **The primary reasons for using this method are:**

- Sending school students often lose credit in travel time.
- Increased graduation requirements may cause some students to lose the opportunity to attend a career center.
- The coursework can be focused on what students need to be successful in a chosen technical field.
- This model provides a method for meeting Carl D. Perkins III requirements for the integration of academics into career technical education.

### **Considerations:**

- This model leads to collaboration with sending schools core subject matter teachers.
- This model can be used as a vehicle to assist secondary CTE teachers to “SEE” how to integrate academics.
- It can be used to assist those students who lack the core skills to be successful in a rigorous technical program of study.
- Little data exists at this time to prove that postsecondary remediation is eliminated.
- This model relies heavily on the development of local materials such as instructional videos.
- Instruction in the academic subject is not always integrated with the technical subject matter.
- Depending upon the delivery schedule, it may reduce technical instructional time.

## Implementation Steps:

1. Do your homework by researching the answers to the questions and complete the matrices found on pages 10-13. There are 11 questions to be answered.
2. Educate the area career center staff. See potential staff questions and concerns found on pages 13.
3. Share the concept and obtain support with the area career center's host district leadership team.
4. Share the concept and obtain support from the area career center's superintendent's council, sending school principals, and guidance counselors.
5. Share the concept and obtain support from postsecondary partners.
6. Share the concept with other stakeholders. See page 19 for those groups and their interests.
7. Identify the core area to be offered.
8. Solicit the help of the middle school, high school, and postsecondary teachers whose core area has been identified for embedded credit. Explain the embedded credit concept.
9. CTE teachers begin identifying core course topics embedded in the CTE curriculums.
10. CTE and core teachers meet to create practical definitions for each identified concept, and core teachers assist CTE teachers in identifying, relating, and validating core topics to identified CTE competency topics.
11. Teachers also identify topics not embedded in CTE curriculums that are necessary for students to know and be able to do for MAP and or postsecondary placements tests.
12. Organize an instructional calendar for each topic identified.
13. Agree on credit and grading issues.
14. Create the lessons and study guides for students.
15. Agree on and create an assessment process. Consider types of tests, both pre-tests and final assessments, pass rates and retake policies.
16. Set goals for student achievement.
17. Develop program evaluation criteria.
18. Implement the program.

## Effectiveness Measures

Embedded credit programs are subject to the same scrutiny that other public education initiatives receive. Planning for the implementation of embedded credit should therefore include plans for evaluating the effectiveness of the program. Both formative and summative evaluations of the program should be included to establish the most effective embedded credit program possible; however, there is no single measure or group of measures that will be appropriate for every embedded credit program. What is important is that effectiveness goals are clearly defined for the local embedded credit program, and data is collected to measure the progress toward achievement of the goals.

So where does that leave the administrator charged with developing effectiveness measures? While there is no single “right way,” there are some common considerations and/or components to establishing valid and reliable effectiveness measures. These components include:

**Programmatic evaluation.** A formative evaluation of the program operation, including data such as number of students participating, number of students who fulfill all embedded credit course requirements, student satisfaction with the program, and parent satisfaction with the program. The end result of this evaluation of effectiveness is positive change in the embedded credit program, including the instruction and materials used. Potential measures could include the number of students who plan to earn or are in the process of earning embedded credit, the number of students who take the final course assessment, and satisfaction with the program (parents, students and/or community). In addition, regular surveys should be administered to participating students and teachers to determine their perceptions of what is working and what needs to be changed.

**Outcome evaluation.** A longitudinal evaluation of the broader outcomes of the embedded credit program. Outcome evaluation measures will provide longer term impact and effectiveness data for the program. This could include collecting data on the number of embedded credit students requiring remediation in the embedded credit subject at their postsecondary institution, the number of students who earn embedded credit, the number of students earning embedded credit on track for graduation as compared to students not earning embedded credit, MAP Scores, and ACT scores.

Several models of program of effectiveness measures are included in the supplementary CD. Each one is an example only; there is no “right way” to establish effectiveness measures. In addition, you may want to consider:

- the ACT “Benchmarks for [College] Readiness,” as cut scores for the award of embedded credit;
- WorkKeys pre and post assessment instruments;
- Collection of anecdotal data to support the numbers;
- High Schools That Work benchmarks; and
- Post Graduation (180-Day) Placement Follow up.



# **Appendices**

## Embedded Credit School Profile - Arcadia Valley Career Technology Center

### Contact Information

School Name: Arcadia Valley Career Technology Center  
 Director: David A. Ruhman Website: www.av.k12.mo.us  
 Phone: (573) 546-9700, ext. 4 Email: druhman@mail.av.k12.mo.us

### Implementation Information

Date implemented: Spring 2004 Months to implement: 6 # of sending schools: 8

Why did you implement embedded credit?	The need to service students who were losing credit by attendance at the Career Technology Center due to long travel times to, and from, the facility. The need was also present to increase student achievement levels in academic areas, as measured by MAP data.
What have been the additional benefits realized after implementation?	Greater enthusiasm for the program by the students (developing goal oriented behavior academically), more enthusiasm by local business leaders (evidenced through our advisory council membership), and more leadership and involvement by our local community college in developing a component that will allow for college credit to be an extension of the Embedded Credit.
How is embedded credit instruction provided?	The Embedded Credit program at our institution is truly 'embedded'. Students receive direct, or indirect, instruction related to the topics. When direct instruction in a concept is not part of the classroom curriculum, the instructor then utilizes the developed lesson plans to complete the cycle of information necessary for student success on the standardized measuring tool.
How did you secure funds for your embedded credit program?	Perkins funding was used for the professional development, development of lesson plans and revision of the program. Local funds are used in a limited fashion.
Who did you involve in implementation and how were they involved?	Mathematics and Communication Arts instructors from our eight sending schools were utilized to provide a comprehensive view of what would need to be included to secure acceptance of the embedded credit as a viable program offering for our students. Administrators and Counselors are consulted on a regular basis for suggestions and reviews.
What professional development was provided for teachers?	Teachers are provided instruction in the implementation and use of the standard lessons for material that is not a regular part of the classroom curriculum. DVD lessons are under construction to provide an alternative method for delivery of lessons and/or provision of remedial instruction for students who are having difficulty.
What subjects/courses are embedded in which courses/programs?	Technical Mathematics and Technical Writing are embedded in the following programs: Health Sciences, Business Services, Auto Collision and Repair, Building and Grounds Maintenance, Welding Technologies, Automotive Technology, Computer Networking and Repair, Graphic Communication Arts, and Teacher Preparation.

## Embedded Credit School Profile - Arcadia Valley CTC (page 2)

### Course(s) Information

Transcripted Course Names and Course Descriptions:	Decisions on how the courses are transcripted are determined by the local school district and not influenced by the Career Technology Center.
How are credits awarded (when, how many, how transcripted)?	2 full credits are possible (if all work is completed prior to the end of the two-year program and the student successfully completes the two-year program at the Career Technology Center). A student can work on one, or both, of the available credits. Again, transcripting of the courses is left up to the local school district. Completion certification and a numerical grade are provided for the school to determine how the credit and grade will be transcripted.
Who accepts the credit (host district, sending district, postsecondary)?	We have found that the host school district for each of our sending schools and our local postsecondary institution are accepting the credit. In some cases it is listed and transcripted as an 'elective' credit. It is not eligible for NCAA certification and at some of our sending schools it is not applicable to the sequence of courses required for graduation.
Is embedded credit awarded/accepted as core or elective credit?	We have the situation where it is applied both ways. Schools are particular to the stated requirements of the state for graduation requirements. When it is not applicable as a core subject class, it is always accepted as an 'elective' mathematics and/or technical writing credit.
Is the credit articulated? How? To whom?	We are currently working with Mineral Area College to expand the Embedded Credit to complete the requirements for Technical Mathematics and Technical Writing at the Community College level. When completed this will afford the opportunity for a student to articulate an additional 3, or 6, credits with this institution. We hope to see this apply to other community colleges as well.
If your school is involved in forming an embedded credit consortium, please describe.	No, we are not forming a consortium at this time.

## Embedded Credit School Profile - Cass Career Center

### Contact Information

School Name: Cass Career Center (CCC)  
 Director: Jim Spencer Website: www.casscareercenter.com  
 Phone: 816-540-3343 Email: spencerj@harrisonville.k12.mo.us

### Implementation Information

Date implemented: January 2005 Months to implement: 15 # of sending schools: 12

Why did you implement embedded credit?	Students were losing credit in their home school due to bus travel time. Students are having difficulty in passing college entrance tests. Increased graduation requirements were going to decrease the students ability to attend our classes.
What have been the additional benefits realized after implementation?	Students receive credit in Communication Arts (CA) for some classes at CCC. All students receive additional help in the areas of CA and Mathematics.
How is embedded credit instruction provided?	Each classroom instructor utilizes a modified curriculum developed for our needs. The curriculum was developed by a CA team and our high school CA instructor.
How did you secure funds for your embedded credit program?	Carl Perkins and local budget.
Who did you involve in implementation and how were they involved?	A CA instructor from each sending school, all sending school Supts/Principals, advisory groups and CCC staff.
What professional development was provided for teachers?	Multiple meetings and workshops were developed in order to produce curriculum and train staff.
What subjects/courses are embedded in which courses/programs?	Communication Arts. Mathematics to begin during the 07-08 school year.

### Course(s) Information

Transcribed Course Names and Course Descriptions:	The class is listed as "Career & Technical English" Course #054862
How are credits awarded (when, how many, how transcribed)?	One-half credit per year providing the work is completed. All course work has assignments connected which are graded by the instructor and High School CA instructor.
Who accepts the credit (host district, sending district, postsecondary)?	Each district gives own credit.
Is embedded credit awarded/accepted as core or elective credit?	Each district chooses. This year students at CCC have received core CA credit.
Is the credit articulated? How? To whom?	NA
If your school is involved in forming an embedded credit consortium, please describe.	NA

## Embedded Credit School Profile - Cape Girardeau Career and Technology Center

### Contact Information

School Name: Cape Girardeau Career and Technology Center  
 Director: Rich Payne Website: www.capectc.org  
 Phone: 573-334-0826 Email: payner@cape.k12.mo.us

### Implementation Information

Date implemented: 2005-06 Months to implement: 8 # of sending schools: 12

Why did you implement embedded credit?	The need to provide the students attending CTC the ability to meet new graduation requirements, and to increase the rigor of career programs to prepare students for postsecondary training.
What have been the additional benefits realized after implementation?	Increased collaboration between CTC and the sending schools, and recognition of how career programs are used to move students toward postsecondary training.
How is embedded credit instruction provided?	Competencies are instructed by the career instructor and pushed in by the basic skills instructor.
How did you secure funds for your embedded credit program?	Use of High Schools That Work grant to fund the collaboration, and Perkins funds to support the basic skills instructor.
Who did you involve in implementation and how were they involved?	Math teachers from all sending schools, and career instructors curriculum audits and design of tests and questions. Sending school and CTC administrators and counselors in policy and implementation.
What professional development was provided for teachers?	I think the collaboration was one of the best professional development activities for the instructional staff.
What subjects/courses are embedded in which courses/programs?	Math (Technical Math) in all program areas at CTC in 2005-07, Communication Arts in all program areas 2007-09.

### Course(s) Information

Transcribed Course Names and Course Descriptions:	
How are credits awarded (when, how many, how transcribed)?	The course will be documented by CTC and transcribed by the sending schools. 1 unit of credit to be transcribed during the senior year.
Who accepts the credit (host district, sending district, postsecondary)?	Presently it is accepted by the sending districts. Soon to be accepted by post secondary.
Is embedded credit awarded/accepted as core or elective credit?	Elective credit.
Is the credit articulated? How? To whom?	It is not.
If your school is involved in forming an embedded credit consortium, please describe.	No.

## Embedded Credit School Profile - Lebanon Technology and Career Center

### Contact Information

School Name: Lebanon Technology and Career Center  
 Director: Gail Holcomb Website: www.lebanon.k12.mo.us  
 Phone: 417 532 5494 Email: gholcomb@lebanon.k12.mo.us

### Implementation Information

Date implemented: Fall 2006 Months to implement: 12 # of sending schools: 4

Why did you implement embedded credit?	Increased state academic credits and personal finance requirements were creating a situation where students could not take any 3 or 4 period classes and still meet their graduation requirements. Advisory committees continue to ask for students with better Math and English skills.
What have been the additional benefits realized after implementation?	CTE teachers will be much more deliberate in making sure that all students can communicate and calculate needed math when they graduate. CTE teachers have had the opportunity to share with the HS Math and English Departments what they are all about. HS teachers have helped our instructors with Math and English skills that they didn't feel adequate to teach. The school board became aware and now feels that academic teachers should be integrated into a CTE building.
How is embedded credit instruction provided?	CTE/academic teachers have determined what skills they need to teach and developed a timeline in their curriculum to introduce each skill. Math and English teachers will be on site as well as a basic skills teacher. Those teachers will track progress, continue to help CTE teachers, award credit, help with grading of papers, provide remediation on an individual basis and collect artifacts for portfolios. Students will demonstrate proficiency in a variety of ways determined by both CTE and academic teachers. It is a goal that instruction is complete after the 3 <sup>rd</sup> semester to allow for more help and/or internships the last semester.
How did you secure funds for your embedded credit program?	The local school district is incurring the cost of a halftime Math and English teacher because the number of required credits earned will be equal to the ones that would have been earned in their classroom. Perkins professional development funds were used during the implementation period.
Who did you involve in implementation and how were they involved?	CTE/ HS teachers through our Professional Learning Communities established curriculum objectives and matched academic objectives to CTE curriculum during the 6 early-out days provided by the district. CTE/HS teachers had summer workshops to decide how each CTE program needed to be supported by the academic teachers, and to set schedules if possible Area superintendents and/or their designees from their Math and English Departments during advisory-type meetings were briefed and allowed input.
What professional development was provided for teachers?	All early out days (6) and individual summer planning with each CTE teacher, meeting for half a day with the Math teacher and half a day with the English teacher.

## Embedded Credit School Profile - Lebanon TCC (page 2)

What subjects/courses are embedded in which courses/programs?	Junior Math and Senior English in Auto Tech, Auto Collision, Welding Technology, Manufacturing, Machining Technology, Building Trades, and Early Childhood Careers. Only CTE courses with 3 or more credits each year for 2 years are teaching embedded credit.
---	---

### Course(s) Information

Transcripted Course Names and Course Descriptions:	
How are credits awarded (when, how many, how transcripted)?	Two additional credits are awarded after completion of the CTE 2-year program (one additional English, one Math), students do not have to accept the credit but will do all of the work as it is embedded and part of their CTE program. Transcripted as Junior Math 3 and Senior English (we may change to Technical Math if accepted by Universities). Progress reports given as Incomplete Pass or Fail during the 2 years. If a student moves/transfers to another district, it will be decided by the academic teachers whether partial credit can be transcripted on a case-by-case basis.
Who accepts the credit (host district, sending district, postsecondary)?	Local District, all sending schools, State Board of Education, most state colleges and universities for admissions (one of the reasons for naming it Senior English and Junior Math). No articulation or dual credit at this time.
Is embedded credit awarded/accepted as core or elective credit?	Core.
Is the credit articulated? How? To whom?	No college credit given.
If your school is involved in forming an embedded credit consortium, please describe.	N/A

## Contact List for Embedded Credit Implementation

<b>ADMINISTRATORS AND COUNSELORS:</b>				
Boatwright, Bob	Lebanon HS	Counselor	417-532-9144	
Pope, Larita	Lebanon HS	Counselor	417-532-9144	
Smith, Robert	Lebanon HS	Principal	417-532-9144	
Stephens, Mileen	Lebanon HS	Counselor	417-532-9144	
Dillard, David	Arcadia Valley	Asst. Superintendent	573-546-9700	ddillard@mail.av.k12.mo.us
Eastin, Dennis	South Harrison HS	Principal	660-425-8051	
<b>COMMUNICATION ARTS EDUCATORS:</b>				
Klempert, Amy	Arcadia Valley	Instructor	573-546-9700	
Sargent, Karen	Arcadia Valley	Instructor	573-546-9700	ksargent@mail.av.k12.mo.us
Smith, Debbie	Arcadia Valley	Instructor	573-546-9700	
Hammons, Angie	Bunker R-III	Instructor	573-689-2507	
Nodine-Hassert, Nancy	Bunker R-III	Instructor	573-689-2507	
Ramsey, Doris	Clearwater R-I	Instructor	573-223-7426	
Wright, Lee Ann	Clearwater R-I	Instructor	573-223-7426	
Hedrick, Evelyn	Iron County C-4	Instructor	573-244-5521	
Esther, Beth	Lebanon HS	Instructor	417-532-9144	
Hayes, Aimee	Lebanon HS	Instructor	417-532-9144	ahays@lebanon.k12.mo.us
Duff, Pattie	South Harrison HS	Instructor	660-425-8051	pduff@shr2.k12.mo.us
Holcomb, Tammie	South Harrison HS	Instructor	660-425-8051	tholcomb@shr2.k12.mo.us
Hodge, Kelly	South Harrison HS	Instructor	660-425-8051	khodge@shr2.k12.mo.us
Phillips, Alissa	South Harrison HS	Instructor	660-425-8051	
Beard, Anna-Marie	South Iron R-I	Instructor	573-598-4241	
Tibbs, Heather	South Iron R-I	Instructor	573-598-4241	
<b>CAREER AND TECHNICAL EDUCATORS:</b>				
Ackley, Bart	AVCTC	Instructor	573-546-9700	
Allen, Mike	AVCTC	Placement Coordinator	573-546-9700	
Amelunke, David	AVCTC	Instructor	573-546-9700	
Asher, Marlene	AVCTC	Instructor	573-546-9700	masher@mail.av.k12.mo.us
Barnhouse, Donna	AVCTC	VRE	573-546-9700	

Bates, David	AVCTC	Instructor	573-546-9700	
Henson, Rebecca	AVCTC	Instructor	573-546-9700	
Hobson, Max	AVCTC	Instructor	573-546-9700	
Montgomery, Vernon	AVCTC	Instructor	573-546-9700	
Walker, Patti	AVCTC	Instructor	573-546-9700	
Yates, Mike	AVCTC	Instructor	573-546-9700	
Bowling, Joey	LTCC	Instructor		jbowling@lebanon.k12.mo.us
Byrd, Kelly	LTCC	Basic Skills Instructor		kbyrd@lebanon.k12.mo.us
Chapman, Kelly	LTCC	VRE		kchapman@lebanon.k12.mo.us
Gann, Steve	LTCC	Instructor		sgann@lebanon.k12.mo.us
Green, Stan	LTCC	Instructor		sgreen@lebanon.k12.mo.us
Jemes, Natalie	LTCC	Instructor		njemes@lebanon.k12.mo.us
Moore, Brian	LTCC	Instructor		bmoore@lebanon.k12.mo.us
Rhodes, Steve	LTCC	Adult and AEL Director		srhoades@lebanon.k12.mo.us
Rushing, Breck	LTCC	Instructor		brushing@lebanon.k12.mo.us
Smith, Mike	LTCC	Instructor		msmith@lebanon.k12.mo.us
Starnes, Peggy	LTCC	Placement Coordinator		peggy.starnes@ded.mo.gov
Stowe, Jack	LTCC	Instructor		jstowe@lebanon.k12.mo.us
Yakle, Doug	LTCC	Instructor		dyakle@lebanon.k12.mo.us
Adkins, Cathy	North Central Career Center	Instructor	660-425-2201	cadkins@shr2.k12.mo.us
Carter, Randy	NCCC	Instructor	660-425-2201	rcarter@shr2.k12.mo.us
Lighthill, Duane	NCCC	Instructor	660-425-2201	dlighthill@shr2.k12.mo.us
Polley, Alan	NCCC	Instructor	660-425-2201	apolley@shr2.k12.mo.us
Sweat, Eric	NCCC	Instructor	660-425-2201	
<b>EMBEDDED CREDIT LEADERSHIP COMMITTEE:</b>				
Ruhman, David	AVCTC	Basic Skills Instructor	573-546-9700	druhman@mail.av.k12.mo.us
Payne, Rich	Cape Girardeau Career & Technology Center	Director	573-334-0826 x156	payner@cape.k12.mo.us
Spencer, Jim	Cass Career Center	Director	816-380-3253	spencerj@harrisonville.k12.mo.us
Wells, Richard	Clinton Technical School	Director	660-885-6101	rwells@clinton.k12.mo.us

Alford, Nancy	DESE/Agri	Supervisor	417-264-7807	nancy.alford@dese.mo.gov
Roberts, Don	Excelsior Springs Area Career Center	Director	816-630-9240	droberts@estigers.k12.mo.us
Caughron, Jayme	Grand River Technical School	Assistant Director	660-646-3414	jcaughron@grts.org
Wolf, Ron	Grand River Technical School	Director	660-646-3414	ronwolf@grts.org
McGregor, Roger	Hannibal Career and Technical Center	Director	573-221-4430	rmcgregor@hannibal.k12.mo.us
Briggs, Regenia	Hillyard Technical Center	Director	816-671-4170	r.briggs@sjsd.k12.mo.us
Reynolds, Mike	Howard County R-II	Director	660-338-2012	mreynolds@tnp.more.net
Frederking, Kathy	Lewis & Clark Career Center	Director	636-443-4950	kfrederking@mail.stcharles.k12.mo.us
Gail Holcomb	LTCC	Director	417-532-5494	gholcomb@lebanon.k12.mo.us
Fayle, Terri	Missouri Center for Career Education	Curriculum Specialist	660-543-8524	fayle@cmsu1.cmsu.edu
Harrison, Barbara	MCCE	Co-Director	660-543-8127	harrison@cmsu1.cmsu.edu
Mackay, Paul	MCCE	Co-Director	636-629-4338	mackay@cmsu1.cmsu.edu
Watkins, Larae	MCCE	Curriculum Coordinator	660-543-8768	watkins@cmsu1.cmsu.edu
Abel, Lester	Moberly Area Technical Center	Director	660-269-2690	label@moberly.k12.mo.us
Hopkins, David	North Callaway County	Director	573-386-2211	dhopkins@mail.northcallaway.k12.mo.us
Linthacum, Larry	NCCC	Director	660-425-2196	larrylinthacum@shr2.k12.mo.us
<b>MATHEMATICS EDUCATORS:</b>				
Axtel, Michele	Arcadia Valley	Instructor	573-546-9700	
Branstetter, Vickie	Arcadia Valley	Instructor	573-546-9700	
Crites, Tabatha	Arcadia Valley	Instructor	573-546-9700	
Pollack, Connie	Arcadia Valley	Instructor	573-546-9700	
Crites, Randall	Bunker R-III	Instructor	573-689-2507	
Halter, Ken	Central R-III	Instructor	573-431-2616	
Schweiss, Kory	Central R-III	Instructor	573-431-2616	
Polk, Ronda	Clearwater R-I	Instructor	573-223-7426	
Roach, Peggy	Clearwater R-I	Instructor	573-223-7426	
Demuth, Dave	Lebanon HS	Instructor	417-532-9144	
Richardson, Jina	Lebanon HS	Instructor	417-532-9144	

Williams, Curtis	Lebanon HS	Instructor	417-532-9144	
Godwin, Carol	Lesterville R-I	Instructor	573-637-2201	
St. Gemme, Jason	Lesterville R-I	Instructor	573-637-2201	
Buckner, Sandy	South Iron R-I	Instructor	573-598-4241	
McCaig, Leslie	South Iron R-I	Instructor	573-598-4241	

## Glossary

**Accepted credit.** Required core curriculum from the Missouri Department of Higher Education. You must complete the 16-unit core curriculum in order to apply to a Missouri public four-year college or the 17-unit core curriculum in order to apply to the University of Missouri if you are applying to a particular public college or university for the first time; will attend full time; and have 23 or fewer college credits hours from another school. To earn one unit of credit, a student must meet all the requirements of a particular course and earn a passing grade in a course that meets for at least 7,830 minutes a year. Half- and quarter-units may be earned for courses that meet proportionately fewer minutes.

<http://www.dhe.mo.gov/mdhecentralhscorecurriculum.shtml>

**Additional credit.** Credit offered in such situations as embedded or competency based.

**Advanced placement.** A program that provides advanced high school students with an opportunity to take college/university-level courses taught in the high school by specially trained teachers. Students who demonstrate mastery of the advanced material through success on nationally standardized AP exams may be eligible for college credit.

**Articulation.** An articulation agreement that allows students who successfully complete the embedded credit course to receive articulated credit towards their postsecondary degree. The student who is receiving articulated credit usually must enroll at the particular postsecondary institution. After accumulating a specified number of credit hours students are given additional college credit for their high school work that parallels a specific postsecondary course. The articulation between the high school and the college usually specifies the credit and requirements for transcribing.

**Bridge course.** A course containing competencies not included in a secondary course, but is necessary to articulate credit to a postsecondary course.

**Competency based.** Instruction focused on specific tasks and duties that enable a student to perform a task or duty. Compilation of tasks and duties that help define a job skill.

**Dual credit.** Dual credit courses enable high school students to receive, simultaneously, both high school and college-level course credit. Dual Credit provides high-performing high school students an affordable opportunity to experience high-quality college-level courses. Dual credit courses may be taught by full time college faculty who instruct high school students either on campus or in the high school via on-site instruction or interactive television. Dual credit courses may also be taught using the same modes of delivery by adjunct faculty who may teach part time both on the college campus and at the high school site. However, the large majority of dual credit courses are taught by high school faculty with supervision by on-campus college faculty.

**Embedded credit.** An embedded credit course has been created when an educator or a school incorporates competencies from one subject into another and awards students' credit for both subjects. See Definition section for more information.

**Out of class/additional work instruction.** Topics not covered in class and required to be completed by students on their own time.

**Pull-out instruction.** Students are pulled out of class to learn specific course competencies that are not address in the CTE class time.

**Statewide articulation agreements.** An articulation agreement that allows students who successfully complete coursework to receive articulated credit towards their postsecondary degree at any community college within the state. The student who is receiving articulated credit usually must enroll at the particular postsecondary institution. After accumulating a specified number of credit hours students are given additional college credit for their high school work that parallels a specific postsecondary course. The articulation between the high school and the college usually specifies the credit and requirements for transcribing.

## Frequently Asked Questions

**How does embedded credit relate to core data?** Core data is about seat time, funding and certification. The concern for embedded credit is how the embedded credit course is transcribed.

**Do schools just getting started with embedded credit have to follow the procedures outlined in this manual?** No. The guidelines are suggested practice only. They have been reviewed and approved by DESE, but are not required steps.

**What institution awards credit for the embedded credit course?** The student's sending school makes all transcribing and credit award decisions. The title of the embedded credit course, the number of credits awarded, and all transcript notations are made at the discretion of the sending school district.

**What core course names are acceptable as appropriate high school coursework to postsecondary institutions?** It is not unusual for highly selective colleges and universities to require incoming freshmen to have completed certain core academic courses. A school will find a review of freshmen admission requirements of various postsecondary institutions helpful in selecting a name for an embedded credit course. Be aware that Missouri Core Data numbers do assign course names.

**Can embedded credit be offered as dual credit or articulated credit?** Students receiving articulated credit usually must enroll at the postsecondary institution. After accumulating a specified number of credit hours, the student is given additional college credit for the secondary coursework that parallels a specific postsecondary course. The articulation between the high school and the college usually specifies the credit and requirements for transcribing. A cost to the student may or may not be involved.

With dual credit, students receive college and high school credit simultaneously. A dual credit course is delivered at the high school, but is taught to the curriculum of the postsecondary institution. In addition, a dual credit instructor meets the staffing requirements and qualifications as the postsecondary institution and is often considered adjunct staff. Usually, students must pay the postsecondary institution's fees to obtain dual credit. The credit is immediately transcribed upon completion of the course.

Embedded credit can be offered under either condition. However, in the case of academics embedded in a CTE course, it may be difficult to offer embedded credit as dual credit unless the CTE teacher can meet the postsecondary institution's staff qualifications for the academic subject. It should be noted that in either instance, adding the option of dual credit to an embedded credit course elevates the rigor and acceptance of the course. In addition, it may also provide the opportunity to give the course a core subject name.

For students pursuing NCAA eligibility, counselors should carefully consider using embedded credit in meeting college entry requirements. It is very important to check the course name with the NCAA.

**Must all sending schools participate in order for an area career center to offer embedded credit?** No.

**Can an area career center require all students to participate in the embedded credit portion of the CTE course/program if not all sending schools participate?** Yes.

**Does DESE have any plans for requiring assessment data on embedded credit?** No specific reporting requirements are in place as of this writing. However, it is good practice for school districts to collect relevant data that points to the effectiveness of any embedded credit program from its inception. Helpful information about effectiveness measures is provided in this toolkit.

**What information is needed to begin embedded credit?** The section entitled Implementation Guidelines will provide you with the initial steps in preparing yourself and your schools for embedded credit implementation.