

The CALIFORNIA COMMUNITY COLLEGES SYSTEM
WELCOMES YOU to the

INSTRUCTIONAL PROGRAM IMPROVEMENT RESOURCE GUIDE

Introduction

Faculty, administrators and researchers in all educational disciplines are encouraged to explore and use the process tools and resources herein for student outcome-based program improvement.

The Instructional Program Improvement Resource Guide is structured for fast access to information by use of the sidebar bookmarks and go-to links. Clicking website or e-mail links within the document will take you directly to those sites. Closing those sites will return you to your last location within the document.

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Part I - A Key Performance Indicators Model for Program Improvement

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The *Instructional Program Improvement Resource Guide* provides vocational educators with a framework for improving occupational programs at their college. Information from many sources, especially: *Improving Performance: A Five Step Process*, published by the US Department of Education, Division of Vocational and Technical Education, *Instructional Program Review and Revitalization Process*, published by Florida Community College at Jacksonville, and the *Key Performance Indicators Program Review* used by Fullerton College, has been synthesized for easy application by practitioners.

This *Instructional Program Improvement Resource Guide* is an introduction to understanding data and their uses, created specifically for occupational educators who wish to improve their programs. Reading and using this handbook will enable practitioners to identify and locate appropriate program measurements, analyze basic trend information and make appropriate comparisons, and begin to develop program improvement solutions. Because this is an introductory guide, practitioners are encouraged to seek the advice or assistance of available college institutional research resources.

The Five-Step Program Analysis Process

The US Department of Education *Five Step Process for Improving Performance* involves:

1. Documenting program results
2. Analyzing key performance indicators by a variety of comparisons
3. Identifying direct or root causes of differences
4. Selecting best solutions to impact desired program performance
5. Pilot testing those solutions, evaluating impact, and then implementing tested solutions found to have significant impact

The *Instructional Program Improvement Resource Guide* incorporates the Perkins Core Indicators as part of a broader program review model that promotes examination of the core indicators in the context of a set of key performance indicators that reflect a wider range of information about educational, including vocational, programs. The key performance indicators model subsumes the core indicators within a more complete picture of program outcomes, which in turn are subsumed within a broader model that takes into account program inputs and program environments. This model assumes that the core indicators reflect

important, but not exhaustive, program outcomes and that those program outcomes can only be evaluated in the context provided by additional key performance indicators of program demand, program resources, program efficiency, and additional program outcomes.

This perspective provides a more comprehensive view of core indicators in the larger context of a complete set of program key performance indicators. In a sense, the core indicators are seen as an important, but not complete, subset of the program outcome key performance indicators. The complete set of program outcome key performance measures includes the core indicators and additional program outcomes.

It should be noted that the model provides for the incorporation of student learning outcomes as an additional subset of program outcome key performance indicators. To the extent the student learning outcomes have been identified, through industry standards, external licensing agencies, or faculty identification, those student learning outcomes may easily be included in the model.

Key Performance Indicators

This Program Improvement Guide focuses on a model of program or discipline review that incorporates key performance indicators. Key performance indicators are measures of critical and informative aspects of educational programs. These key performance indicators reflect crucial activities and outcomes of programs. This Key Performance Indicators Model provides a relatively comprehensive, yet succinct, review of the activities of programs, incorporating extant information, including empirical data, which is comparable across programs.

The key performance indicators are subjected to analysis to identify strengths and weaknesses of programs, trends over time, linkages to important program directions, and strategies for improvement. Four major clusters of key performance indicators are collected, reflecting program access, program resources, program efficiency, and program success

The US Department of Education's *Improving Performance: A Five Step Process* identifies five steps in the program improvement process. The **first step is documenting program results**. It can be argued that this first step, documenting program results, is the most important part of the program improvement process. The majority of this handbook will focus on documenting program results, however, it is essential that practitioners understand that program improvement occurs when available evidence of program performance gaps is used to support new academic or student service initiatives.

The key performance indicators selected for inclusion in this Program Improvement Guide have been chosen for several reasons: first, and most importantly, because they serve as the best measures of program activities and

outcomes; second, and also importantly, because most of the key performance indicators are readily available through the normal data collection, processing and reporting that takes place through several units of the California Community Colleges Chancellor's Office, notably the Technology, Research, and Information Systems Division, and the Vocational Education Services branch of the Educational Services Division, or through local district and college data reporting activity. Several of the key performance indicators in the outcomes cluster require additional data collection efforts. Examples of effective practices in the collection of these additional indicators are cited in a later section.

Program/Course Analysis Tools

The documentation is followed by the **second step, analysis of the key performance indicators**. The analysis consists of two kinds of comparisons: comparisons among programs and comparisons over time, or trend analysis. Analyzing historical trends and making appropriate comparisons enables practitioners to assess past program performance and current program status so that factors driving student success, the quality of the educational experience, and performance gaps and exceptional performance can be ascertained. The performance history of a program provides the context for programs to chart their future course and improve student outcomes. The analysis of key performance indicators allows practitioners to diagnose performance gaps and begin to understand critical components of student success and program success.

- ***Comparisons Among Programs***

Key performance indicators are most informative when they are compared to similar indicators from appropriately chosen comparable programs. These indicators can be thought of as benchmarks. Benchmarks are points of reference that allow comparison of a program's performance with another standard. Historical high and low points, statewide performance targets, the performance levels of the best performing program in the state, and the aggregate performance level of peer programs are all examples of benchmarks that can be used as a basis for comparison. When conducting an analysis of program results, results should ideally be measured against several benchmarks to ascertain your program performance gaps. This type of analysis should reveal program strengths as well. The following proposed hierarchy of comparison allows for the development of meaning for each of the key performance indicators.

First, comparisons can be made to similar programs within a college. These comparisons may follow natural alignment of programs in a college's academic structure, for example, within a division. An Accounting program might be compared to other programs within a Business division. A Construction program would be compared to other programs within a Trades and Technology division.

These comparisons must take into account differences among programs but are the most natural comparisons to make. Absolute difference may not matter as much as relative differences. For example, the number of degrees and certificates awarded annually will be correlated with the size of the program. An additional indicator, degrees and certificates per major, could be created and compared across programs. This takes into account the varying size of programs.

A second comparison can be made to identical programs at other colleges. It is prudent to create a set of peer institutions for making such comparisons. A set of peer institutions can be created in several ways. There are commercial data companies that will create a set of peer institutions for a fee. Perhaps the simplest way to create such a set of peer institutions involves the use of the United States Department of Education, National Center for Educational Statistics' Peer Analysis System, International Postsecondary Educational Data System (IPEDS) (<http://www.nces.ed.gov/ipeds/pas/>). Using the Peer Analysis System, peer institutions may be identified based on a number of institutional characteristics, including location, annual enrollment, student ethnicity, and others. Once the peer institutions have been identified, values for the key performance indicators can be collected. This collection may involve direct contact with the peer institutions or simple identification of the values of selected indicators by using several California Community College Chancellor's Office reports, notably the Chancellor's Office Data Mart (<http://www.cccco.edu/divisions/tris/mis/reports.htm>), a query tool that permits the identification of values on several key performance indicators, including student demographics, program awards, and retention and success by program. The retention and success key performance indicators are organized by TOP codes and may be ascertained at the 2-, 4-, and 6-digit levels.

A third set of comparisons may be made with standards or goals for each of the key performance indicators. These standards or goals may come from Educational Master Plans, previous program reviews, enrollment management plans, or other college documents. In addition, several of the key performance indicators have implied standards. For example, the funding mechanism for the California Community Colleges is based on an average class size of 35. Relatively few absolute standards exist for these key performance indicators. One important set of standards for the key performance indicators in occupational education programs is the set of Level of Performance values negotiated between the Chancellor's Office and the United States Department of Education. The complete description of the definition, measurement, and rationales for each level of performance are contained in the Core Indicators Report, Appendix 10 (http://misweb.cccco.edu/voc_ed/vtea/Appendix-10.pdf). Each of the Core Indicators Reports, available at http://webdata2.cccco.edu/VTEA_RPTS.htm, shows the program performance, the state-negotiated standard, and the percentage difference between the two measures.

Programs can also be compared with exceptional programs throughout the state. These programs would be the top performing programs. Similarly, programs could be compared to the lowest performers in the state. When making these kinds of comparisons, it is also important to determine the extent to which externally controlled program characteristics such as the overall preparation levels of entering students play a role in program performance.

Finally, it is important that program performance be assessed for the total program as well as different types of students participating in the program such as various demographic groups and special populations. This type of analysis will reveal who is performing at higher rates than others and whether any performance disparities exist that need to be addressed.

- ***Comparisons Over Time***

The next set of comparisons that should be made focus on changes over time. When examining program performance, it is essential that program results be examined over a period of time. Ideally, program outcomes should be reviewed over a three to five year period. If the data are not available for that length of time, then a two-year period can be used. It is important to understand the trends in program data as well as the trends in the benchmark data. Understanding the historical trends in program data as well as the benchmark data will allow a determination of whether program trends are in the same direction as the selected benchmark or in the opposite direction as the selected benchmark.

One of the most common types of analysis is historical program performance. This type of analysis examines program performance on specific measures and compares current performance within the program with past performance. The benchmark would be the historical high or low within the program's own history. In this type of analysis the program is measured against previous successes.

Representation of the data in bar graphs with appropriate axes can simplify the process of trend analysis. These graphs provide the opportunity for visual examination of changes over time. Because of differences in the number of measurements that contribute to each key performance indicator, the significance of changes should be evaluated with appropriate statistical tests and the assistance of the institutional research staff should be encouraged. But visual examination can indicate whether or not a program is improving on each of the key performance indicators.

Identify Root Causes

Documenting program results moves practitioners from identifying where performance gaps are occurring to answering the questions of why performance gaps exist. Generally speaking, the causes of program performance gaps can be grouped into two categories, direct causes and indirect causes. Direct causes of performance gaps directly impact a performance measure. For example, effective classroom instructional practice is a direct cause of student achievement because it directly impacts academic achievement. Teacher training on the other hand is an indirect cause of student achievement, because it will only impact student achievement if the training results in improved classroom instruction. The US Department of Education identifies root causes as direct sources of poor program performance.

The **third step, identifying direct or root causes of program performance gaps**, begins with the development of a list of all potential causes. A list of all potential causes should be generated using several of the following methods: conducting a review of recent, relevant research literature, reviewing program evaluations and program effectiveness documents gathered as a part of a regular program review process, analyzing available student data, conducting a variety of focus groups with students, faculty, and staff, brainstorming, and networking with peer or exceptional programs to get a sense of appropriate program benchmarks.

Once a list of potential causes has been developed the causes should be grouped into two categories – causes within the control of the program and those beyond the control of the program. Causes of poor performance within the control of the program should be further evaluated in terms of whether: a clear, compelling theory for the cause exists, strong and compelling evidence exists regarding the impact of the cause on performance, it is a direct rather than indirect cause of performance problems, it is a major problem at the college, opportunities and resources exist to address the cause, and major stakeholders support the mediation of the cause.

Selecting the most critical root causes within the control of the institution is the next step. Because it is not always possible or desirable to address all root causes simultaneously, it is important that the most critical causes of performance gaps be addressed first. Root causes should be prioritized for intervention based upon their potential to impact performance, those perceived as having the greatest impact on performance with the strongest theory and evidence to support them should be addressed first.

Select the Best Solutions/ Evaluate/ Implement

Once critical root causes have been identified, the **fourth step is to select solutions that best mediate the impact of those causes on program performance**. Selecting the best solutions for gaps in program performance is very similar to the process used for identifying root causes. The US Department of Education describes the following steps in choosing program improvement solutions: (1) develop a list of all potential solutions, (2) apply a systematic analysis that involves reviewing the solution's underlying theory and how well it addresses root causes, and (3) review the empirical evidence of the solution's success.

Practitioners can identify potential strategies and program improvement models by reviewing solutions proposed by peers and other researchers, examining processes of top performing programs, as well as developing "home grown" solutions. Strategies selected for implementation should: (1) be based on sound theories, (2) clearly address critical root causes, (3) be linked to strong evidence of success under similar conditions, (4) be resource realistic, (5) be sustainable within existing resource structures, and (6) be supported by key stakeholders as a viable solution.

Before implementing solutions for an entire program, the **fifth step is to pilot test those solutions on a small scale or with a specific population to determine their efficacy**. Pilot testing improvement strategies implies that the strategy be evaluated to determine whether or not it achieved its stated objectives.

Designing an effective program evaluation is beyond the scope of this manual. Practitioners should consult with their college Institutional Research office and/or refer to the US Department of Education manual, *Improving Performance: A Five Step Process*.

Once potential strategies have been pilot tested and determined to be effective, they can be implemented for the entire program. Program wide implementation efforts should be subject to ongoing monitoring and evaluation activities to determine the degree to which stated objectives are achieved. It should be noted that program improvement is a continuous process requiring practitioners to constantly monitor program outcomes and improvement efforts. Trends in outcomes should be used to provide on-going feedback to practitioners regarding student success and program performance.

Effective Practices/ Contacts/ Websites

There are two kinds of effective practices reviewed in this section. The first set of effective practices refers to those activities and services that lead to program

improvement. The second set of effective practices refers to data collection activities.

- ***Program Improvement***

Each of the key performance indicators could engender a list of effective practices designed to improve performance in each specific area. This section focuses on those practices that have been evaluated and demonstrated to improve performance outcomes.

While the literature on program improvement is extensive, three major sources of program improvement practices are reviewed in this section: (1) The Research and Planning Group for California Community Colleges' Center for Student Success Exemplary Practices Project, (2) the United States Department of Education, Division of Vocational and Technical Education and related resources, including the Peer Collaborative Resource Network for Program and Data Quality, and 3) the California Community Colleges Association for Occupational Education,

The Research and Planning Group for California Community Colleges established the Center for Student Success in June 2000 as an active research and evaluation unit to (1) provide research and evaluation services to community colleges and organizations on issues of statewide concern within the California community college system; (2) promote conversations and discussions among practitioners about effective practices promoting student success through a network of exchange opportunities and peer review activities, within and across disciplines in the colleges; (3) provide models of organizational and professional development that practitioners can apply to support initiatives promoting student success; (4) create easy-to-use information about effective practices accessible with supporting documentation to all practitioners within the community colleges; and (5) establish the Center as a permanent statewide organization to address the mission and goals as stated above.

The first project undertaken by the Center for Student Success was a compilation of effective practices related to Partnership for Excellence goals from colleges throughout California and the United States through two processes, a review of the literature on student success and a survey of programs, practices, and services from California Community Colleges. The Survey Team surveyed California Community Colleges to find programs that related to student success. The team also reviewed literature nationwide to identify a set of "good practices" found consistently in their search. The following web site contains a set of links to reports that reflects the results of the work for these two teams: <http://www.rpgroup.org/cssweb/surveys/css-surveys-results.htm>. The effective practices listed identified in both the literature review and the college surveys are described and contacts for each of the practices are provided. Many of these practices address the core indicators for occupational education programs and

several are directly identified with student success in occupational education programs. The Center for Student Success has also assembled a collection of web sites that provide more in-depth information about many of the effective practices identified in the review of the literature, <http://www.rpgroup.org/cssweb/practices/css-practices-web-sites.htm>.

The United States Department of Education, Office of Vocational and Adult Education has produced several guides that focus on effective practices. Two publications that are of particular interest are *Improving Performance: A Five Step Process* (http://www.edcountability.net/allresources_p.cfm) and *Research on Causes and Improvement Strategies for Perkins III Core Indicators: Example Models and Research Results* (http://www.edcountability.net/allresources_p.cfm). Each of these documents reflect the Program Quality Initiative of the United States Department of Education, Office of Vocational and Adult Education, designed to assist occupational education programs, colleges, and other educational agencies to use data to improve program performance. Each of these documents should be examined thoroughly.

Improving Performance: A Five-Step Process describes a generic five-step process that colleges can use in its existing form or modify for incorporation into their existing improvement processes. This guide is one of the resources developed by the United States Department of Education, Office of Vocational and Adult Education (OVAE), for state education agencies, schools and colleges as part of Perkins III accountability efforts, in particular, the Program Quality Initiative (PQI). The five steps were briefly described in the Key Performance Indicators section of this guide.

Research on Causes and Improvement Strategies for Perkins III Core Indicators: Example Models and Research Results provides three tables for each of the Perkins III Core Indicators. The three tables examine (1) root causes and indirect causes of performance problems along with brief descriptions and explanations of each cause and related research evidence, (2) other causes that are assumed to be outside the control of colleges and should be considered constraints or factors for developing and evaluating improvement strategies and model practices, along with related research evidence, and (3) potential improvement strategies for one or more of the root causes, which describes the theory and evidence for the improvement strategy and one or more models and the evidence that supports the strategy, if available.

The California Community Colleges Association for Occupational Education annually identifies outstanding programs. These award-winning programs often incorporate effective practices in promoting student success. The outstanding programs, along with contacts for each program, may be found at <http://www.cccaoc.org/>.

Additional sources of information on effective practices may also be found in Perkins III Postsecondary Performance: Best Practices from Missouri. Minnesota: Using Data for Decision Making Project in Search of Continuous Improvement, and various publications of the Center on Education and Work (<http://www.cew.wisc.edu/>), CORD (<http://www.cord.org/index.cfm>), ERIC Clearinghouse on Adult, Career, and Vocational Education (<http://www.ericacve.org/textonly/index.asp>), the National Center for Career and Technical Education (<http://www.nccte.com/>), and the self-identified practices listed by a Perkins funded project through Sierra College (<http://www.vteabp.org>)

- **Data Collection**

Most of the key performance indicators included in the program improvement model can be collected from published reports available through the Chancellor's Office Technology, Research, and Information Systems division or the Vocational Education Services branch of the Educational Services division. Others should be readily available through standard district or college reports.

Two exemplary data collection processes have recently been showcased at workshops of the Research and Planning Group for California Community Colleges and the California Community Colleges Association for Occupational Education Conference. These two data collection processes provide additional sources of data for the evaluation of occupational education programs.

The first data collection activity focuses on follow-up surveys of former vocational education students at California Community Colleges. In particular, the research and occupational education staffs of the Los Rios Community College District conducted this project. Follow-up surveys of former students were tailored to individual occupational education programs. The response rate far surpassed the usual low response rate for such surveys. Details of the process may be found at <http://www.rpgroup.org/>.

The second data collection activity relies on focus groups to examine occupational education programs. These structured focus groups elicit a wide range of responses from currently enrolled students and provide information on student satisfaction with occupational education programs. Further information about this use of focus groups may be obtained from Leslie Ellorin, Coordinator of Research and Analysis, College of the Siskiyous, ellorin@siskiyous.edu.

The Key Performance Indicator Clusters/ Table

Four major clusters of key performance indicators are collected, reflecting program access, program resources, program efficiency, and program success

The **program access** cluster of key performance indicators reflects opportunities for access and internal demand, using indicators such as applicants, majors,

registrations, and efforts in the areas of recruitment, outreach, marketing, and scheduling of programs, courses, and services, including day, evening, weekend, online, and off-site classes and services. It also includes external demand, as indicated by current and projected positions in an occupation and annual new positions in an occupation.

The **program resources** cluster of key performance indicators reflects the fiscal and human resources devoted to the program. This encompasses personnel, including full-time faculty, part-time faculty and staff support, and fiscal support, including salaries, supplies, equipment, and other costs. Distinctions should be made among local, state, and federal funds and funds from other sources

The **program efficiency** cluster of key performance indicators reflects information about the relationship of resources committed to a program or activity and the use of those resources, as indicated by such variables as average class size, cost per FTES student, ratio of student (enrollees, majors, graduates) to faculty and other cost and enrollment measures. The program efficiency key performance indicators typically combine program access or program success key performance indicators with program resources key performance indicators.

The **program success** cluster of key performance indicators reflects mainly the outcomes for students in the program. This cluster also includes the **VTEA core indicators**. These key performance indicators include course retention and success, persistence rate of majors, graduation rate, degrees and certificates awarded, transfers, performance following transfer, and measure of satisfaction with the program of current and former students, as well as other measures of employment, licensing and certification rates, and employer satisfaction.

The following table (Figure 1) illustrates an array of key performance indicators for the typical vocational education program.

Key Performance Indicator	Year 1	Year 2	Year 3
Program Access			
Majors			
New Majors			
Courses Offered			
Day			
Evening			
Weekend			
Short Term			
Distance Education			
Classes Offered			
Day			
Evening			
Weekend			
Short Term			
Distance Education			
Registrations			
Weekly Student Contact Hours			
Full-time Equivalent Students			
Available Jobs			
Program Resources			
Full-time Equivalent Faculty			
Personnel			
Supplies			
Program Efficiency			
Ave Class Size			
Fill Rate (Census)			
FTEs per FTEF			
Cost per FTEs			
Cost Per Major			
Program Success			
Course Retention			
Course Success- Any Course			
Course Success- Next Course			
Course Success- Advanced Course			
Major Persistence			
Degrees Awarded			
Certificates Awarded			
Licenses			
Transfers			

Figure 1

Key Performance Indicator	Year 1	Year 2	Year 3
Program Success (continued)			
Performance Following Transfer			
Student Satisfaction			
Employment Rate			
Employment Retention			
Employer Satisfaction			

Figure 1 (cont'd)

Definitions

The following definitions are provided for each of the key performance indicators.

- ***Program Access***

Majors – The number of students who identify the department as their major field of study.

New Majors – The number of students who identify the department as their major field of study for the first time within the academic year. This includes both students who are new to the college and returning students who change their major.

Courses Offered – The number of distinct courses offered in the department.

Day Courses Offered – The number of distinct courses in the department that are offered before 4:00 pm, Monday through Thursday.

Evening Courses Offered – The number of distinct courses in the department that are offered at or after 4:00 pm, Monday through Thursday.

Weekend Courses Offered - The number of distinct courses in the department that are offered at or after 4:00 pm on Friday, or on Saturday or Sunday.

Short-Term Courses Offered - The number of distinct courses in the department that are less than full semester in length.

Distance Education Courses Offered – The number of distinct courses in the department that are offered through television or online.

Sections Offered – The number of distinct sections offered in the department.

Day Sections Offered – The number of distinct sections in the department that are offered before 4:00 pm, Monday through Thursday.

Evening Sections Offered – The number of distinct sections in the department that are offered at or after 4:00 pm, Monday through Thursday.

Weekend Sections Offered - The number of distinct sections in the department that are offered at or after 4:00 pm on Friday, or on Saturday or Sunday.

Short-Term Sections Offered - The number of distinct sections in the department that are less than full semester in length.

Distance Education Sections Offered – The number of distinct sections in the department that are offered through television or internet.

Registrations – The total number of students registered in all classes in the department at census date, also known as seat count.

Weekly Student Contact Hours (WSCH) – The total number of weekly student contact hours for all students in all classes in the department.

Full Time Equivalent Students (FTES) – The total number of full-time equivalent students. Each FTES is the equivalent of one student enrolled for 525 contact hours (15 units x 17.5 weeks x 2 semesters).

Available Jobs – The total number of jobs available in occupations for which the department prepares students. These data are obtained from the Occupational Outlook provided by the Employment Development Division of the State of California Department of Labor.

- ***Program Resources***

Full Time Equivalent Faculty – The total number of full-time equivalent faculty teaching in the department. Each full-time faculty member equals 1 FTEF. Part-time faculty are aggregated so that 1 FTEF = 30 units taught. Reassigned time not in direct service to the department is removed from the total.

Personnel - The total cost of all personnel assigned to the department. The cost of staff that is shared by several departments is apportioned (1) by the proportion of time assigned to each department, (2) proportionally by FTEF, or (3) equally among the departments.

Supplies – The total cost of supplies for the department. The costs of supplies which are shared by several departments are apportioned (1) proportionally by FTEF, or (2) equally among the departments.

- ***Program Efficiency***

Average Class Size – Total number of registrations divided by total number of sections. This figure excludes certain independent study sections.

Fill Rate (First Day) – The total number of registrations divided by the total number of seats available on the first day of instruction.

Fill Rate (Census Date) – The total number of registrations divided by the total number of seats available on the semester census date.

WSCH per FTEF – The total number of weekly student contact hours divided by the total number of Full-Time Equivalent Faculty.

FTES per FTEF - The total number of Full-Time Equivalent Students divided by the total number of Full-Time Equivalent Faculty.

Cost per WSCH – The total cost of the department (personnel and supplies) divided by the total number of weekly student contact hours.

Cost per FTES - The total cost of the department (personnel and supplies) divided by the total number of Full-Time Equivalent Students.

Cost per Major - The total cost of the department (personnel and supplies) divided by the total number of majors in the department.

- ***Program Success***

Course Retention – The percentage of students who do not withdraw from class.
Retention = (Enrollment at Census Date – Withdrawals)/Enrollment at Census Date

Course Success (Any Course) – The percentage of students who successfully complete a class.

Success = (Total Number of A, B, C, and CR grades)/Enrollment at Census Date

Course Success (Next Course) – The percentage of students who successfully complete the following class.

Success = (Total Number of A, B, C, and CR grades)/Enrollment at Census Date

Course Success (Advanced Course) – The percentage of students who successfully complete a following advanced class.

Success = (Total Number of A, B, C, and CR grades)/Enrollment at Census Date

Major Persistence – The percentage of new majors in a department in the Fall term who enroll in the Spring term.

Degrees Awarded – The total number of degrees awarded in the academic year by the department.

Certificates Awarded – The total number of certificates awarded in the academic year by the department.

Licenses – The total number of licenses earned by graduates of the department in the academic year.

Transfers – The percent of majors in a department who are graduates and leavers in a cohort who are found in a four-year institution.

Performance Following Transfer – The number of credits attempted, GPA, and performance in selected courses of majors following transfer to a four-year college or university.

Student Satisfaction – The satisfaction of students enrolled in courses in the department.

Employment Rate – The percent of majors in a department who are graduates and leavers in a cohort who are found in a UI covered employment during one of the four quarters following the cohort year.

Employment Retention – The percent of majors in a department who are graduates and leavers in a cohort who were employed for three or more consecutive quarters in the four quarters following program exit.

Employer Satisfaction – The satisfaction of employers with student who received a degree or certificate in a department.

Non-traditional programs – The percent of students participating in and completing programs leading to nontraditional employment who are of the under-represented gender.

PART II- Considering Special Population Students

By: Laurie Harrison
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Identifying Special Populations Students

Special populations as defined in Section 3 of the Carl D. Perkins Vocational-Technical Education Act of 1998 means:

- individuals preparing for nontraditional training and employment
- individuals with disabilities
- displaced homemakers
- individuals with other barriers to educational achievement, including individuals with limited English proficiency
- individuals from economically disadvantaged families, including foster children
- single parents, including single pregnant women

The following definitions are taken from Section 3 of the Perkins Act:

- ***Nontraditional training and employment*** - occupations or fields of work including careers in computer science, technology, and other emerging high skill occupations, for which individuals from one gender comprise less than 25 percent of the individuals employed in each such occupation or field of work. This definition is based on employment statistics, not on enrollment data.
- ***Individual with a disability*** - an individual with any disability (as defined in Section 3 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102))
- ***Displaced homemaker*** - an individual who is in one of the following three categories: i) has worked primarily without remuneration to care for a home and family, and for that reason has diminished marketable skills; ii) has been dependent on the income of another family member but is no longer supported by that income; or iii) is a parent whose youngest dependent child will become ineligible to receive assistance under part A of title IV of the Social Security Act (42 U.S.C. 601 et. seq.) not later than 2 years after the date on which the parent applied for assistance under this title. To qualify a displaced homemaker must also be unemployed or under employed (working less time than desired or at jobs below one's skill level) and experiencing difficulty in obtaining or upgrading employment.

- ***Individual with limited English proficiency*** - a secondary school student, an adult, or an out-of-school youth, who has limited ability in speaking, reading, writing, or understanding the English language, and whose native language is a language other than English, or who lives in a family or community environment in which a language other than English is the dominant language.
- ***Economically disadvantaged family or individual*** - such families or individuals who are low-income according to the latest available data from the Department of Commerce.
- ***Single parent*** - an individual who is unmarried or legally separated from a spouse, and has a minor child or children for whom the parent has either custody or joint custody; or is pregnant.

Importance of Addressing Needs

The sheer magnitude of special populations in California's community colleges underscores their importance in the State's vocational education future. In the 1999-2000 academic year, the following numbers of special populations students were enrolled in SAM A-C vocational education courses:

Economically Disadvantaged - 368,668
 Limited English Proficient - 78,730
 Students with Disabilities - 56,037
 Single Parents - 43,605 students
 Displaced Homemakers - 14,506
 Nontraditional - 246,167
 Total special population vocational students - 807,713

If colleges are to assure that all students have the opportunity to be self-sufficient, pursue their career aspirations, and improve their quality of life, they must make certain that the needs of special population students are addressed. Furthermore, vocational education dollar allocations to community colleges are based on the number of economically disadvantaged students served by the institution. Economically disadvantaged students are a designated special population group, and students in the other five special population categories, particularly single parents and displaced homemakers, are frequently economically disadvantaged also. Thus in addition to the social importance of meeting these students' needs, there is an economic incentive to all colleges to recruit and retain these students.

There are several strategies for identifying special population students. Many colleges ask students to identify their special population status on registration forms. This has proved to be particularly effective in identifying these students

and providing colleges with more accurate counts. Other colleges have done classroom surveys of students enrolled with success. More information can be found in Chuck Wiseley's article [Collecting Data for Special Populations](http://www.cccco.edu/divisions/esed/voced/resources/faq/CollectingDataForSpecialPopulations-ER.doc) located on the California Community Colleges Vocational Education Division FAQ page www.cccco.edu/divisions/esed/voced/resources/faq/CollectingDataForSpecialPopulations-ER.doc.

The VTEA Core Measure data can provide colleges with the tools to assess how well the needs of special population students are being met. It can be used to determine whether they are accessing and succeeding in courses and programs comparably to other students. An analysis of the VTEA Core Measure data for special population students can answer questions such as:

- In what programs are the greatest number of special population students enrolled? The fewest?
- In which programs do special population students have the highest skill attainment, persistence, and placement? The lowest?
- How is each of the special population sub groups performing compared to each other and to students in general? For example, are disabled students faring as well as limited English proficient students? Do nontraditional students or single parent students fare as well as vocational students in general?

The answers to questions such as these will allow colleges to identify performance gaps, assess which programs are doing well and which need improvement, and which special population groups need additional support. In essence the data can provide colleges with information on where to expend resources to best help students succeed in the classroom.

Types of Data Comparison

Faculty and others can analyze the success of special population students in numerous ways. These include:

- ***Within the institution as a whole***
Institutions may want to know how each of the six special population groups is faring overall. For example, "What is the retention rate for all single parents at the college?"
- ***Within each of the two digit TOP (Taxonomy of Programs) code areas***
Institutions can determine how well each of the six special population groups perform in an instructional area such as Health, or in the area of

Agriculture and Natural Resources. For example, "In the area of health, are nontraditional students performing as well as disabled students?" or "In Agriculture and Natural resources are single parents achieving at comparable levels to Limited English Proficient students?"

- ***Within the four and six digit TOP codes of a two digit area***

Since many instructional programs are contained within the broad two digit top code areas, a more helpful analysis might result from examining programs within an area at the four or six digit TOP code levels. For example, "Within the broad area of Agriculture and Natural Resources, are special population students in animal science doing as well as students in landscape design and maintenance?"

While the analyses might be more meaningful at the four and six digit TOP code levels, it is possible that the numbers of individual special population group members found at these levels may be quite small. This is particularly true in smaller colleges. In this instance it would be possible to aggregate special population students from several similar four or six digit TOP codes or to aggregate data for a single TOP over three to five years.

- ***Across various TOP code areas***

Institutions can track the relative success of their special population students across various programmatic areas. For example, colleges can determine if special populations students in Business are performing comparably to those in Industrial and Technical Education.

- ***Comparisons with identical programs at other colleges***

When these comparisons are made, it is also important to consider the demographic characteristics of the institutions being compared.

- ***Comparisons of Participation vs. Completion Rates in a TOP***

- ***Comparisons to statewide averages***

- ***Comparisons against the state Core Measure goals***

- ***Historical Trends***

Analyzing historical trends may enable practitioners to assess the performance history of a program with respect to special populations even when the numbers of special population students are small. This strategy might be particularly useful in looking at the success of nontraditional students. If a program on average has four nontraditional students per year, it is worth knowing if those students historically fare well or poorly.

A Caveat Regarding Aggregating

While it is possible to group the six special population categories together to obtain an indicator for all such students, the diverse nature of their needs and appropriate remediation strategies would mean that important information would be lost. There are, however, some similarities in several of the six special population categories. One potential grouping would combine Single Parents, Displaced Homemakers, and the Economically Disadvantaged, while doing separate analyses for Disabled Students, the Limited English Proficient, and Nontraditional students.

Identifying Causes

Once the performance gaps for special population groups are identified, an analysis of the causes can take place. Special population students experience performance barriers that may not be factors for the general population. For example potential performance barriers for each of the six groups might be:

- ***Individuals preparing for nontraditional training and employment***
 - Lack of role models
 - Lack of peer support in training programs
 - Increased exposure to sexual harassment
- ***Individuals with disabilities***
 - Isolation due to inaccessibility of classrooms and common areas
 - Inability to participate and benefit fully from instruction
 - Difficulty in forming ties with instructors and peers
- ***Displaced Homemakers***
 - Lack of self-esteem and confidence regarding education and work skills
 - Lack of role models
 - Lack of appropriate clothing for work settings
- ***Individuals with Limited English Proficiency***
 - Inability to participate and benefit fully from instruction
 - Difficulty in forming ties with instructors and peers
- ***Individuals from economically disadvantaged families***
 - Difficulty in purchasing books and materials
 - Difficulty in obtaining reliable transportation to school
 - Lack of role models of successful workers
 - Heightened sensitivity to criticism
- ***Single Parents***
 - Lack of time to spend on campus, reducing options for lab use, instructional assistance and linking with instructors and peers
 - Lack of quality child care

Each institution can develop a list of potential causes/performance barriers. The process of identifying causes is essentially the same as that described in the Part I model for program analysis and improvement. As described there a list of potential causes can be generated using methods such as conducting a review of recent, relevant research literature, conducting a variety of focus groups with students, faculty, and staff, brainstorming, and networking with peer or exceptional programs. Once potential causes are identified, the most critical cause within the scope of the institution's powers of intervention can be identified. As the list above indicates, some of the causes may not be under the direct control of the institution. If this is the case, networking with community and other support groups may provide the keys to special population student success.

Selecting the Best Solutions for Program Improvement

Once causes are identified, solutions and interventions can be tailored to address them. **A solution with general application is to become familiar with campus support systems and resources for childcare or special financial aid.** Otherwise, building on the list of causes/performance barriers described above, a partial listing of potential solutions or remedies might include the following:

- ***Individuals preparing for nontraditional training and employment***
 - ❑ Provide sessions through on-campus presentations or field trips where students can hear and meet successful nontraditional workers
 - ❑ Establish and maintain a mentoring program
 - ❑ Try to place several nontraditional learners together in one training class or at a job site.
 - ❑ Train learners on harassment issues. Have a clear school policy, and enforce the policy if necessary.
- ***Individuals with disabilities***
 - ❑ Ensure that the school environment is well-equipped, accessible, and welcoming for learners with disabilities
 - ❑ Provide alternate forms of instructional delivery and assessment.
 - ❑ Ensure that appropriate staff members are accessible to and have an understanding of the needs of these individuals
- ***Displaced homemakers***
 - ❑ Help displaced homemakers identify skills from their home environment that translate into the workplace
 - ❑ Provide mentors
 - ❑ Provide or link students with clothes closets and 'Dress for Success' programs
- ***Individuals with Limited English Proficiency***
 - ❑ Create group projects and flexible seating arrangements which provide more opportunities for interaction. Language barriers are reduced when students know each other.

- ❑ Write lesson objectives and key concepts on board. Many students can read better than they can understand rapidly spoken English.
- ***Individuals from economically disadvantaged families***
 - ❑ Link with community agencies and other support programs to provide financial assistance (ex: CalWorks, EOPS, Financial Aid)
 - ❑ Provide mentors for students
 - ❑ Provide instructors with training on giving feedback in respectful, sensitive ways
 - ❑ Provide book vouchers
 - ❑ Make multiple copies of supplementary texts available in the classroom
- ***Single parents***
 - ❑ Explore and develop distance learning options and support
 - ❑ Encourage students to support each other by developing a network for getting information (e.g. about class work, homework, childcare)

Effective Practices/ Websites

In selecting solutions and interventions, colleges can build on the successful work of others and published best practices. Many of the websites for effective practices listed in Part I of this document present strategy that is also applicable to special populations students. In addition to those sites, the following is a partial listing of resources and online sites that provide information on effective practices and strategies specifically addressing special population students.

www.vateabp.org

While this website highlights best practices in Industrial and Technical Education, many practices have broader applicability. One of the eight Best Practices categories the site addresses is "Special Populations."

www.casp.cc

This is the official website of California's Joint Special Populations Advisory Committee (JSPAC). In addition to useful resources and information for meeting the needs of special population students, the site is adding a best practices section.

www.napequity.org

This is the website of the National Alliance for Partnerships in Equity, a consortium of state agencies that provide leadership, technical assistance, and professional development regarding issues affecting special population students.

www.dpi.state.wi.us/dpi/dlsis/cte/lbhome.html

The Wisconsin Department of Public Instruction's "TACKLE Box Project" (Technology Action Coalition to Kindle Lifelong Equity) provides training, resources, and support to school communities with the goals of increasing the number of women in technology education, and to providing

a model of educational equity in all career and technical education programs. On the site are listings of school district strategies that work and strategies for administrators, counselors, teachers, and business and community organizations to encourage women to participate in technology education.

www.wiu.edu/cpu

This is the site of the Curriculum Publications Clearinghouse at Western Illinois University where it is possible to order materials developed by the Special Populations Project of the Illinois Center for Specialized Professional Support. These materials consist of a set of five booklets each focused on a special population category. The booklets contain multiple strategies for meeting the needs of the special population subgroup.

www.cal.org/crede

The site of the Center for Research on Education, Diversity, and Excellence (CREDE) helps identify and develop effective educational practices for linguistic and cultural minority students, and those placed at risk by factors of race, poverty, and geographic location.

www.ideapractices.org

This site provides strategies and ideas to support students with disabilities.

PART III- Data Location and Access

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Introduction

The constant question when considering Program Improvement from a Student Learning Outcome basis is where to get data and how to use it for meaningful program analysis. The data analysis task is to look for significant differences in student outcome trends over time.

Then from a program improvement perspective begin the search for answers to questions like “What factors might have caused this”, “Is this significant”, “Is the possible cause within the program design, the instructional delivery, the student support services engaged”, “Is the difference noticed also occurring in similar programs at other colleges, in the occupation”, “Is the possible cause within program or instruction span of control”, “what strategies or actions could be implemented for improvement in this student outcome”?

Parts I and II of this document introduced much of the “how to use data” strategies, mostly program outcome comparisons of some sort. For example, “Across program comparison” of data might consider:

- program to others in the same department
- program to similar others at comparable colleges
- program to predetermined standards or faculty expectations
- program to statewide averages of all similar programs

“Within program comparison considers trends over time of:

- program to itself over three to five years
- student performance as expressed by grade or other measure
- student completion of certificates and degrees
- student retention throughout the program curriculum
- enrollment and related enrollment of various student identities that may indicate unique educational advantage or disadvantage
- graduate employment and employment retention

Trend comparisons identified by local faculty as useful and measurable are key to successful program assessment and improvement.

Part III identifies and introduces data sources that contain various student learning outcome measurements (by college and program) and also some helpful labor market information sources (unduplicated count by county). Of course, the very best student learning outcome data will be that developed and kept at the local college.

Data sources identified and explained herein are:

- VTEA Core Indicators (or Core Indicators) Data
- Chancellor's Office Data Mart
- Labor Market Employment by County (EDD)

Not all data possibilities of each will be reviewed, only those portions found to be most useful for program improvement as determined by college colleagues.

VTEA Core Indicator Data (Core Indicators)

The VTEA Core Indicator data is organized in many reports. These reports are available by college, district or statewide, and by program 2, 4 or 6-digit TOP.

Definitions and Tips:

- TOP: Taxonomy of programs. A numeric identifier of educational programs that groups the identity by 2-digit broad program identities (09-engineering), 4-digit more descriptive program identities (0948 Automotive Technology or 0950 Aeronautical Technology), and 6-digit specific program identities (094800 Automotive Technology or 094820 Automotive Collision Repair). These identities are standard throughout California.
- TO PRINT THESE REPORTS: click on the Print Icon in the toolbar in the report window and select the pages area, entering the from and through page numbers wanted. Otherwise you might get hundreds of pages. Each report shows the page number you are viewing in the report toolbar at top.
- TO VIEW THESE REPORTS FULL PAGE: reduce the view to 75% in the report toolbar at the top (See Figure 5 for PRINT and PAGE SIZING).

The four VTEA Core Indicators of student learning outcomes are:

- #1. Skill Attainment- grade C and above
Does not include non-credit or not-for-credit courses
- #2. Completions- Certificates, Degrees and Transfers
Does not include transfers to private or out-of-state institutions
- #3. Placement and Employment Retention
Does not include military, federal government, or out-of-state employment, or for self-employed.
- #4. Equity- Special Populations and Gender Imbalanced Program outcomes
More meaningful analysis for small enrollments may be improved by groupings suggested in PART II- Special Populations.

To access the VTEA Core Indicators database go to:

www.cccco.edu, the California Community College System website

- Then click Reports (left sidebar)
- Then click VTEA Core Indicator Reports (bottom of list)
- Then click VTEA Core Indicator Reports (top of list)
- And you have arrived at the Core Indicator Report Selection page (this is the launch point for everything and every college's data)

VTEA Core Indicator Reports

The Core Indicator Reports page also provides links to the employment-based identification of gender imbalanced or non-traditional programs, a quick reference for definitions, and methodology of calculation of the core indicators.

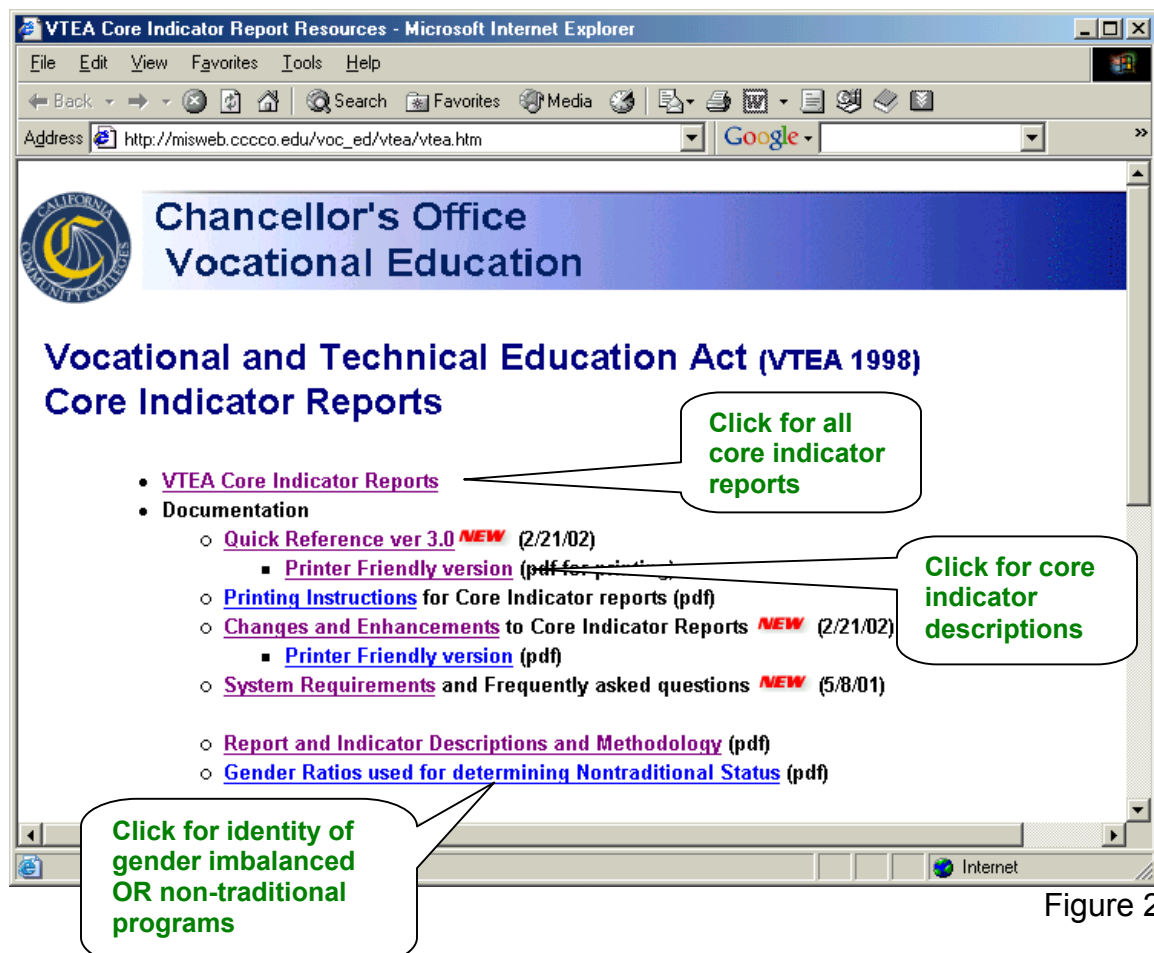


Figure 2

To continue to the Core Indicator Report Selection page

- Click VTEA Core Indicator Reports on this page (top of list)

Core Indicator Selection

To access any VTEA Core Indicator report of interest for any college or to download data, begin here:

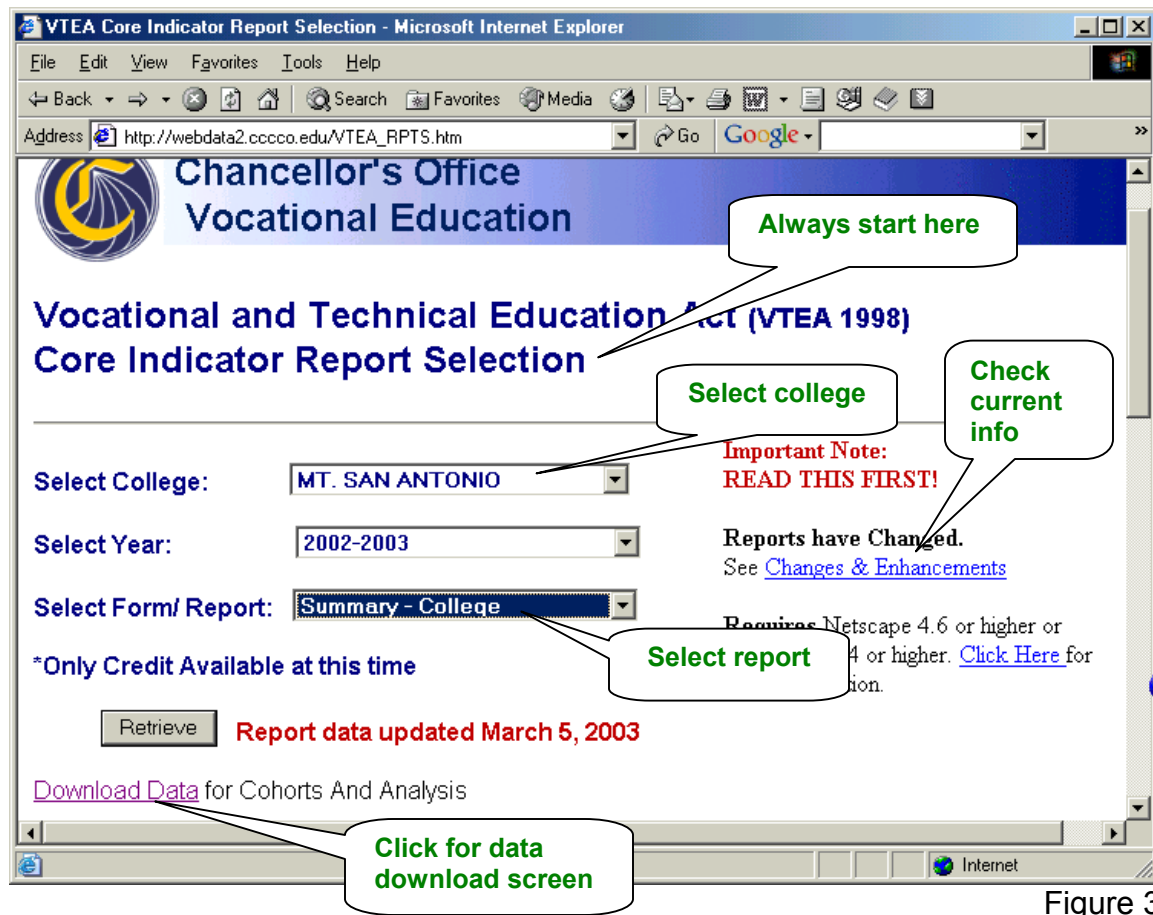


Figure 3

Access this page by:

www.cccco.edu, the California Community College System website

- Then click Reports (left sidebar)
- Then click VTEA Core Indicator Reports (bottom of list)
- Then click VTEA Core Indicator Reports (top of list)
- And you have arrived at the Core Indicator Report Selection page (this is the launch point for everything and every college's data)

Select the VTEA Core Indicator report of interest in the expanded menu here:

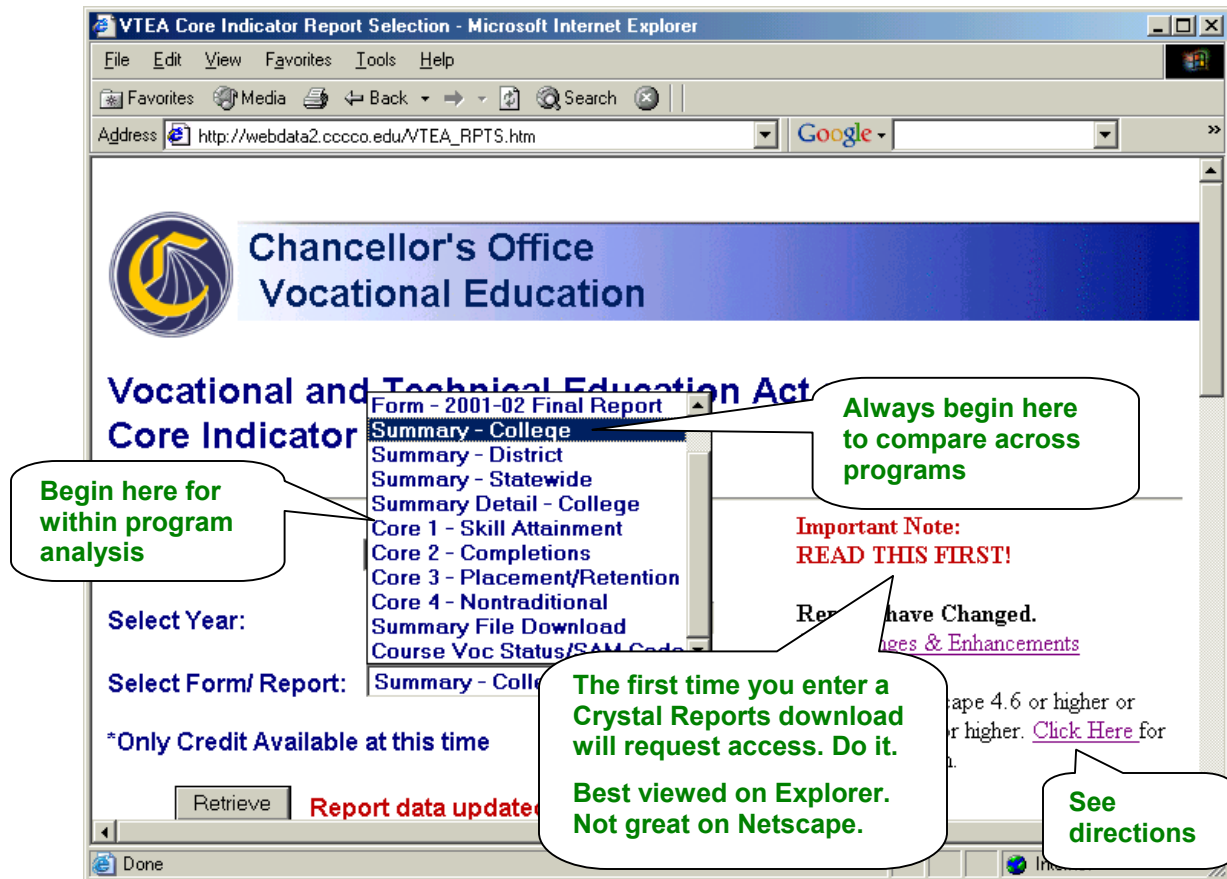


Figure 4

Faculty can best view their program/discipline or other programs/disciplines for comparison by using the 6-digit TOP code. If individual college data is limited or not available, consider reviewing program data for similar colleges in similar communities. Statewide data is reflective of the state's experience. **However, statewide data is not a good indicator of local college expectation or experience.**

The Core Indicator data is only one source of information to consider in analyzing program or course performance for program improvement. Local college and community information, related industry trends, and your own awareness of the influence of local or regional events should also be considered.

Questions on the Measures, Reports, Indicators or data downloading can be addressed to:

Chuck Wiseley cwiseley@cccco.edu
 Chancellor's Office, California Community Colleges
 Office: 916-327-5895 Fax: 916-327-5889

College, District, Statewide Summary Reports

For Program Analysis by Comparing Across Programs

The College, District, Statewide **Summary Reports** show all four core indicators for any specific occupational program. The data is broken out by gender, special populations, college program, district program and statewide. These reports are available by 2, 4 or 6-digit TOP code. The College report below indicates how to access and work with these reports.

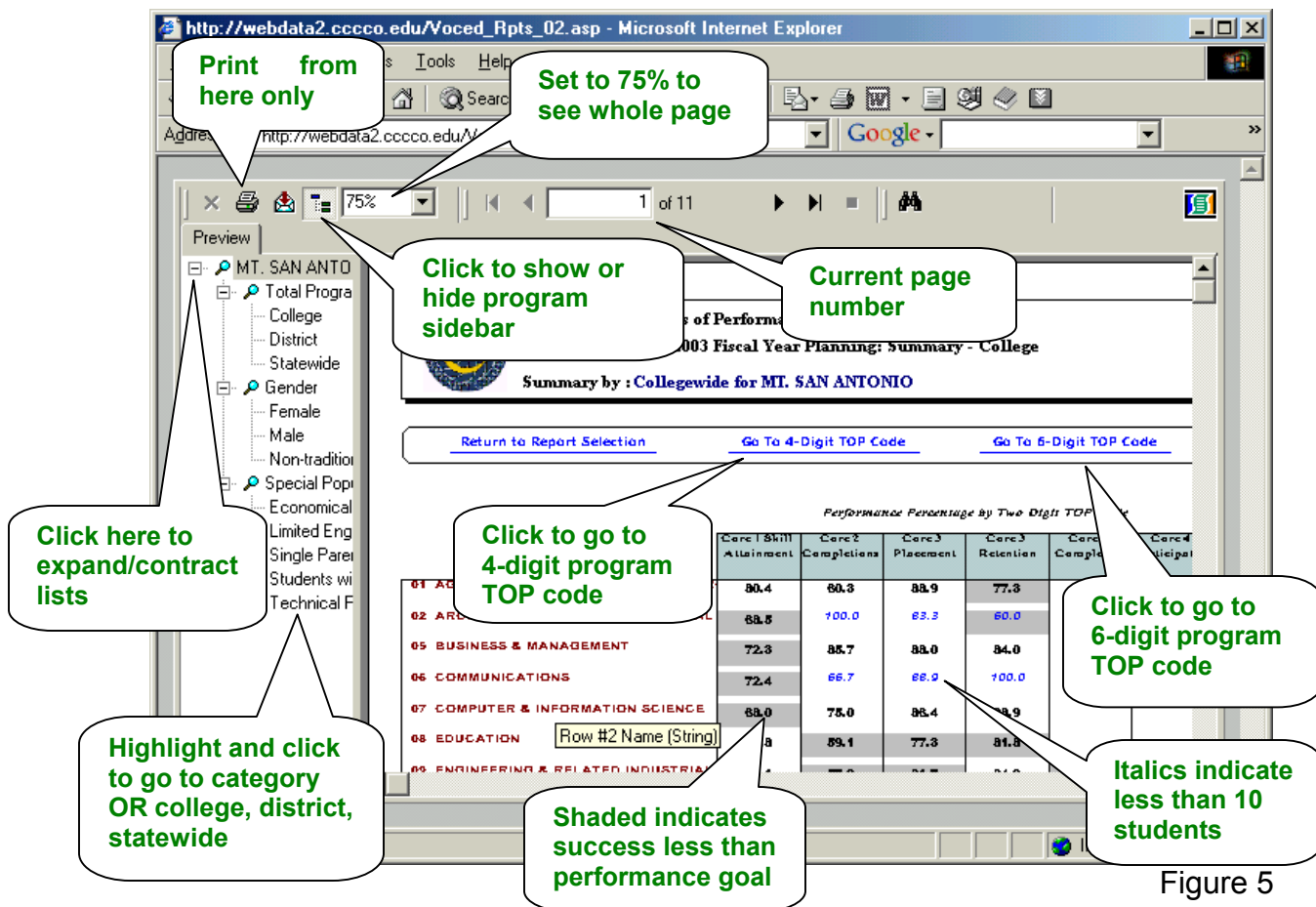


Figure 5

Note that this report is for 2002-2003. The basic assumption when using **Core Indicator Summary Reports** is that you review prior year outcomes in the current year to plan program improvements for the next year. Thus if you review the data in 2001-2002 to plan program improvements for 2002-2003, the Core 1 data are for students enrolled in 2000-2001. The Core Indicators 2-3-4 are outcomes in 2000-2001 for students enrolled in 1999-2000.

The most meaningful data for comparison across programs is at the **6-digit TOP code**. To view this report, click on "Go to 6-digit TOP Code". If interested in switching to district or statewide reports, click the minus box at the College Name in the left sidebar and then again at Total Program to expand the list, and then click District or Statewide. To see gender or special populations student outcome

data click the minus box at either heading to expand those lists, then highlight and click the category of interest.

The **Core Indicator – 1** represents a GPA of 2.0 on the “Forms” reports, and a grade of “C” and above for all other reports. Note: the measure considers only SAM “A-C” courses.

The **Core Indicator – 2** represents completion of certificates, degrees and transfers by students defined as completers or leavers. The student group of interest will have completed at least one course in the middle or end of a program and have accumulated 12-units within a 2-digit TOP discipline. Note that transfers can be tracked only to CSU/UC.

The **Core Indicator – 3** represents placement (employment or transfer) in the year following college for students defined as completers or leavers, and employment retention for three consecutive quarters by those employed. Note: employment can be tracked only to private or public sector employment within California that reports unemployment insurance data to the Employment Development Department (EDD).

The **Core Indicator - 4** represents program participation by students in programs leading to employment where their gender is less than 25-percent of those employed, and completion by those additionally defined as completers.

A **Completer** is a student who has received a certificate or degree regardless of the number of units and including non-credit certificates, or who has enrolled in a California four-year public university.

A vocational **Leaver** is a student who has completed 12-or more units in vocational courses designated SAM “A-D” and who does not show up in a community college for one academic year.

Core 1, 2, 3, 4 Detail Reports

For Program Analysis Within a Program Over Time

The Core 1, 2, 3, 4 **Detail Reports** show three-year trends in percent and student count for each of the indicators. The data is broken out by gender, special populations, college program, district program and statewide. These reports are available by 2, 4 or 6-digit program TOP code. The Core 1 – Skill Attainment report below indicates how to access and work with these reports.

Core 1 – Skill Attainment

Grade C or above – 77.76 Performance Goal 2002-2003

Access by selecting “Core 1-Skill Attainment” in “Select Form/Report” and the “College” of interest on the Core Indicator Report Selection page - sidebar link

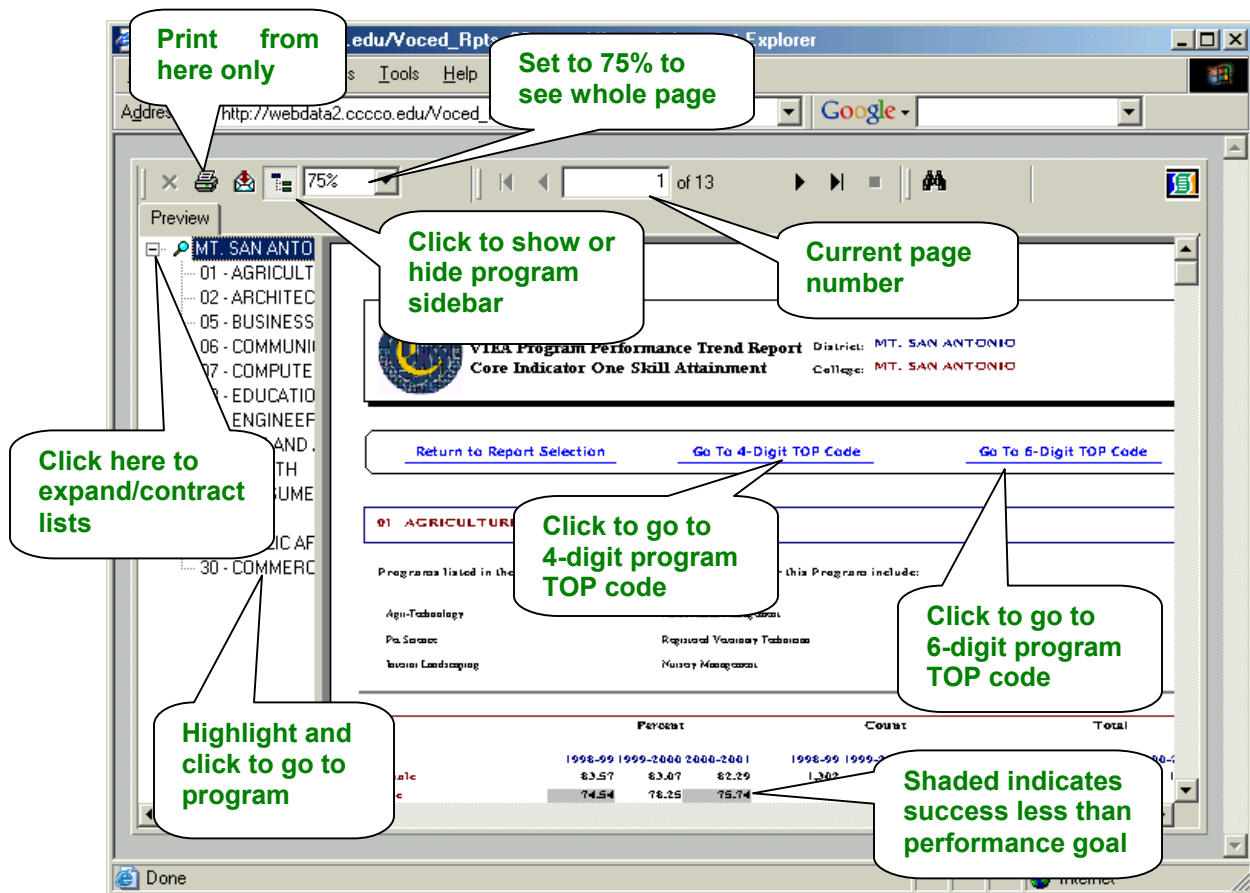


Figure 6

Core 1, 2, 3, 4 performance goals change yearly. Current goal standards may be identified in the information found by clicking “Changes & Enhancements” on the Core Indicator Report Selection page.

The most meaningful data for comparisons within a program is at the 6-digit TOP code. To view this report, click on “Go to 6-digit TOP Code”, click the minus box at the College Name in the left sidebar and then again at Total Program to expand the list, click College, and click on the program of interest.

The **Core 1 – Skill Attainment** details report indicates academic and vocational skill attainment as a grade of C or above for students enrolled in each year specified.

The Core 1 - Skill Attainment indicator is calculated by:

- On the “Forms” report ...students with GPA of 2.0 or above in SAM A-C courses in a program divided by total enrollment in the program (unduplicated count).
- All other reports ...students with grade of C or above in SAM A-C courses in a program divided by total enrollment in the program (duplicated count).

The **Core 2 – Completions** details report indicates earning a certificate or degree or transferring to CSU or UC program for students enrolled in the year prior to that specified.

Core 2 – Completions indicator is calculated by:

- Students completing a certificate or degree or transferring to CSU or UC divided by all students completing a certificate or degree or transferred to CSU or UC (completers) or who have not returned within one year (leavers).
- Only considers students who have completed at least one SAM “A-C” course and twelve or more units of related course work in the program.
- Students who have previously earned a certificate or degree (lifelong learners) are removed from this calculation until they earn another certificate or degree.

The **Core 3 – Placement/Retention** details report indicates placement in unemployment insurance covered employment or continuation at CSU/UC for students in the year following college. The Retention measure indicates three consecutive quarters of employment in the student’s first year after college.

Core 3- Placement indicator is calculated by:

- Student “completers and leavers” found to be employed in any one quarter or enrolled in CSU/UC during the year following college divided by all student “completers and leavers” from the cohort.
- This measure fails to account in the calculation numerator for students who successfully enter federal employment, military, postal work, self-employment, enrollment in private universities, or who move out-of-state. Thus the placement rate may be artificially lowered. This effect can be verified by looking at private and out-of-state institution transfer data found in the Student Right-to-Know data (refer to CCCCO website, Reports).

- Students who have previously earned a certificate or degree (lifelong learners) are removed from this calculation until they earn another certificate or degree.

Core 3 – Retention indicator is calculated by:

- Student “completers and leavers” who were found to be employed in three consecutive quarters in the year following college divided by student “completers and leavers” found to be employed in at least one quarter in the year following college
- Students enrolled in CSU/UC are removed from the calculation.

The **Core 4 – Nontraditional** or Gender Imbalanced details report indicates participation in a SAM “A-D” course and completion success of the minority gender (male/female) in programs where employment of either gender is less than 25% of those employed.

Core 4 – Participation indicator is calculated by:

- Students enrolled who are considered nontraditional or the minority gender by employment in the occupation divided by total enrollment in the nontraditional or gender imbalanced program.

Core 4 – Completer indicator is calculated by:

- Nontraditional or minority gender by employment “completers” divided by all “completers” in the nontraditional or gender imbalanced program.

Using Core Indicator Data to Assess Instructional Programs

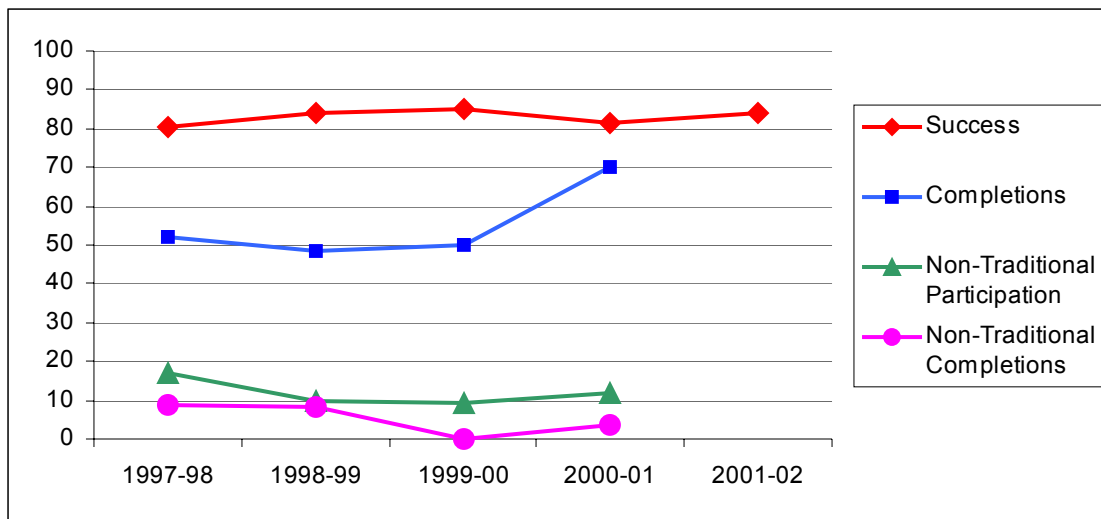
Carol Pepper-Kittredge
Aristata Associates
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Vocational Education faculty members may have access to many sources of data when they seek methods of assessing their programs over time. Data sources might include student surveys, focus group interviews, average GPAs, success and retention rates by semester, and so on. The college's MIS Department and/or the Office of Institutional Research most often collect these types of data. However, when such specific program data is not available to faculty members, statewide VTEA Core Indicator data can also be used in the assessment of vocational education programs.

The Chancellor's Office Core Indicator data can be easily accessed via the Internet (<http://www.cccco.edu/reports/reports.htm>) and used to chart program Success (Core Indicator 1), Completion (Core Indicator 2), and issues that are specific to Non-Traditional Populations (Core Indicator 4) such as enrollment and completion rates. While this data source is less specific and not as current as a college's MIS data, it can be used as one source to analyze performance, changes, and trends on a larger scale.

Examples of Core Indicator Analysis

Four programs within Mt. San Antonio College's Core Indicator TOP Code 09 (Engineering and Related Industrial Technology) were used to generate the graphs that follow. Each chart allows faculty to make observations about program performance.

TOP 0934 – Electronics and Electric Technology

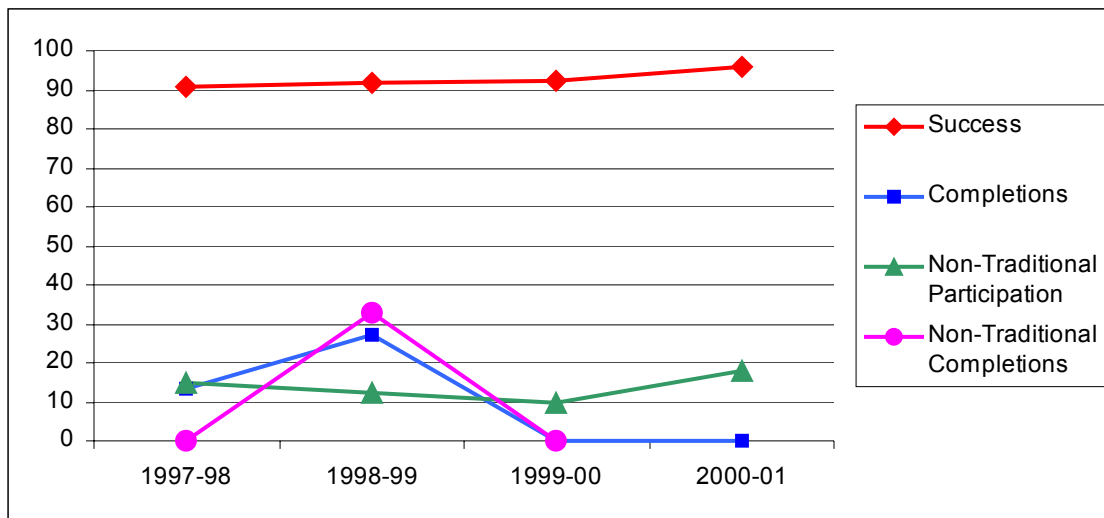
Source: CCCCO VTEA Core Indicator Reports

Figure 7

Table 1 – Core Indicator Data for Mt. San Antonio College's 0934 TOP Code

	Success (%)	Completions (%)	Non-Traditional Participation (%)	Non-Traditional Completion (%)
1997-98	80.2	52.2	17	8.6
1998-99	83.8	48.7	10	8.1
1999-00	84.8	50	9.4	0
2000-01	81.4	70	11.8	3.6
2001-02	84.05	-	-	-

- Success rates in the percentage of students passing courses with a grade of "C" or higher consistently rank above the 72% state minimum performance level and trend upward except in 2000-01 when there was a drop almost back to the 1997-98 level. What factors might be root causes of the drop?
- Completion rates for students receiving degrees, certificates or transfers to other postsecondary institutions or the military remained below the 59.82% state minimum performance level over a three-year period and then increased significantly in 2000-01. What might be the causing this?
- The number of Non-Traditional students (in this case females) participating in Electronics and Electric Technology courses have remained below the state minimum performance level of 27.98%. How does this compare with similar programs at other community colleges? What program and/or recruitment efforts might increase female student enrollment and retention rates?
- Completions for Non-Traditional students (in this case females) participating in Electronics and Electric Technology courses is less than one-third of the state minimum performance level of 26.95%, but increased as did all completions in 2000-2001. What program strategies might further increase female student success rates in this occupational area?

TOP 0935 – Electro-Mechanical/Robotics Technology

Source: CCCCO VTEA Core Indicator Reports

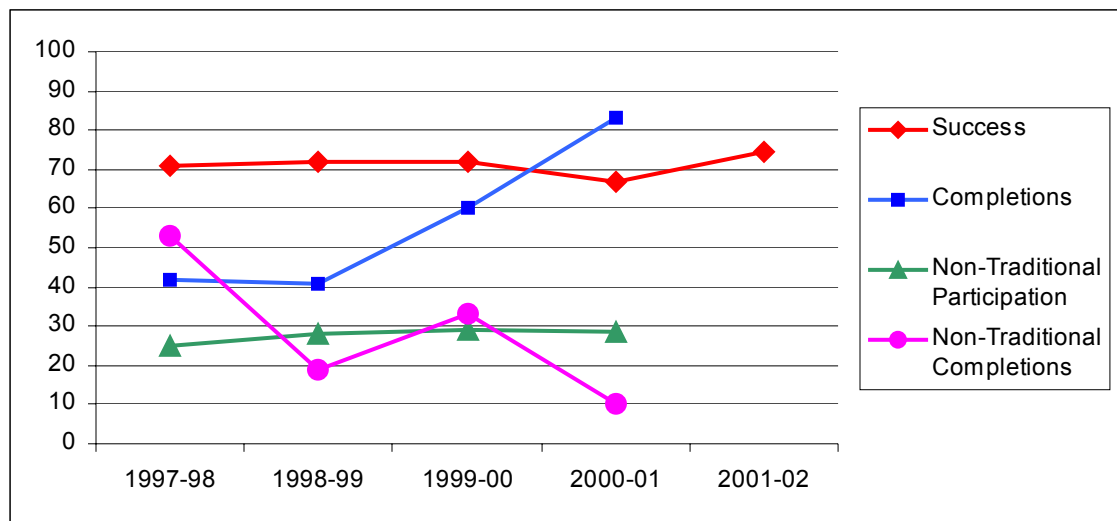
Figure 8

Table 2 – Core Indicator Data for Mt. San Antonio College's 0935 TOP Code

	Success (%)	Completions (%)	Non-Traditional Participation (%)	Non-Traditional Completion (%)
1997-98	90.9	13.3	14.8	0
1998-99	92	27.3	12.3	33
1999-00	92.5	0	9.6	0
2000-01	96	0	17.9	-

	Success (%)	Completions (%)	Non-Traditional Participation (%)	Non-Traditional Completion (%)
1997-98	90.9	13.3	14.8	0
1998-99	92	27.3	12.3	33
1999-00	92.5	0	9.6	0
2000-01	96	0	17.9	-

- Success rates in the percentage of students passing courses with a grade of “C” or higher consistently rank above the 72% state minimum performance level and trend upward. What factors might be root causes of the consistent increases in success rates in over the last four years?
- Completion rates for students receiving degrees, certificates or transfers to other postsecondary institutions or the military are inconsistent. What might be the causing this? Why the upward spike in completions for 1988-1989, and then the immediate decline to no reported completions among all students in the two following years?
- The number of Non-Traditional students (in this case females) participating in Electro-Mechanical/Robotics Technology courses have remained below the state minimum performance level of 27.98%, yet are showing a similar enrollment increase as all students in 2000-2001. Why the increase? How does this compare with similar programs at other community colleges?
- Completions for Non-Traditional students (in this case females) participating in Electro-Mechanical/Robotics Technology courses only met the state minimum performance level of 26.95% in 1998-99, and are showing the same inconsistent trend as are all completions. What root causes might be addressed for improvement?

TOP 0953 – Drafting Technology

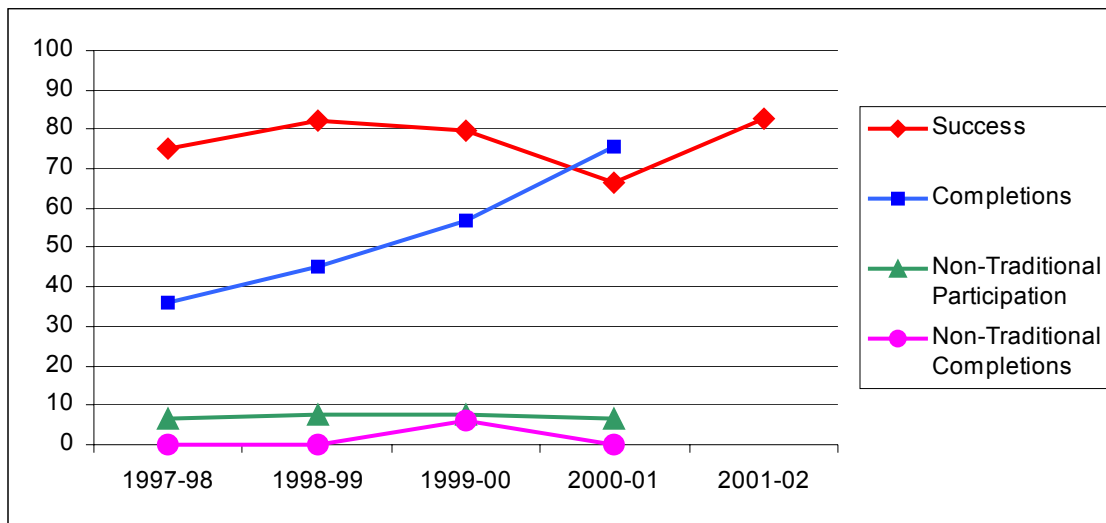
Source: CCCCO VTEA Core Indicator Reports

Figure 9

Table 3 – Core Indicator Data for Mt. San Antonio College's 0953 TOP Code

	Success (%)	Completions (%)	Non-Traditional Participation (%)	Non-Traditional Completion (%)
1997-98	70.9	41.7	25.1	53.3
1998-99	71.9	41	28	18.8
1999-00	71.8	60	29.3	33.3
2000-01	66.7	83.3	28.7	10
2001-02	74.69	-	-	-

- Success rates in the percentage of students passing courses with a grade of “C” or higher consistently rank just below the 72% state minimum performance level, and are reasonably consistent except in 2000-01 when there was a drop to below the 1997-98 level. What factors might be root causes of the drop? What changed to improve student performance later?
- Completion rates for students receiving degrees, certificates or transfers to other postsecondary institutions or the military have remained below the 59.82% state minimum performance level over a three-year period but increased significantly in 1999-2001. What might be contributing to this?
- The number of Non-Traditional students (in this case females) participating in Drafting Technology courses exceeded the state minimum performance level of 27.98% in 1998-2001. How does this compare with similar programs at other community colleges? What program and/or recruitment efforts are contributing to these increased female student enrollments and retention?
- Completions for Non-Traditional students (in this case females) participating in Drafting Technology courses exceeded the state minimum performance level of 26.95% in 1997-98 and 1999-00. What might be the causing the inconsistent completion outcomes?

TOP 0956 – Industrial/Manufacturing Technology

Source: CCCCO VTEA Core Indicator Reports

Figure 10

Table 4 – Core Indicator Data for Mt. San Antonio College's 0956 TOP Code

	Success (%)	Completions (%)	Non-Traditional Participation (%)	Non-Traditional Completion (%)
1997-98	75	36.1	6.6	0
1998-99	82.2	45.1	7.5	0
1999-00	79.5	56.7	7.4	5.9
2000-01	66.7	75.7	6.6	0
2001-02	82.49	-	-	-

- Success rates in the percentage of students passing courses with a grade of "C" or higher consistently rank above the 72% state minimum performance level except in 2000-01 when there was a drop to below the 1997-98 level. What factors might be root causes of the drop in success rates in 2000-01?
- Completion rates for students receiving degrees, certificates or transfers to other postsecondary institutions or the military have made consistent improvement and exceeded the 59.82% state minimum performance level in 2000-01. What might be contributing to this consistent upward trend?
- The number of Non-Traditional students (in this case females) participating in Industrial/Manufacturing Technology courses have remained below the state minimum performance level of 27.98%. What program and/or recruitment strategies might increase female student enrollment and retention rates area?
- Completions for Non-Traditional students (in this case females) participating in Industrial/Manufacturing Technology courses has been 0%, except in 1999-2000. Why is this so different from the all student success outcome? What instructional and/or student support services strategies might reverse this?

Further Discussion

A comparison of four programs has been presented so that faculty members can see the kinds of differences that might exist in a program-to-program review of Core Indicator data trends. Once the Core Indicator data is collected and analyzed, faculty members should begin to ask additional questions:

- Does the program data seem to match what faculty has observed, tracked, and/or monitored over time? What are the discrepancies? Are there alternate data sources that support or challenge these findings?
- What are the challenges to improving rates of success and completion? What kinds of program/curricular/teaching strategies can the department implement to mitigate those challenges?
- How can Non-Traditional students be further encouraged and supported so that participation and success rates can improve? What barriers can be eliminated or reduced to attract and retain Non-Traditional populations into the program?

Data from the Core Indicators should not be looked upon as a “report card” for program performance, but as a springboard for further analysis and discussion on how to make improvements that meet industry and student needs. A fair and in-depth analysis of a program requires that faculty members use multiple data sources – such as interviews, focus groups, average GPAs, retention rates, and levels of employer involvement – to make a full assessment of program strengths and challenges. The Core Indicator data is a good way to start the analysis as the data is easily accessible, understandable, and comparable to other colleges throughout the state.

Downloading Data from VTEA Annual Reports

Clicking the “[Download Data](#)” line on the Core Indicator Report Selection page brings up a new selection screen. Selecting the college and planning year will provide a spreadsheet-like listing of all related college and core indicator data that can be saved as a comma delimited or Excel file.

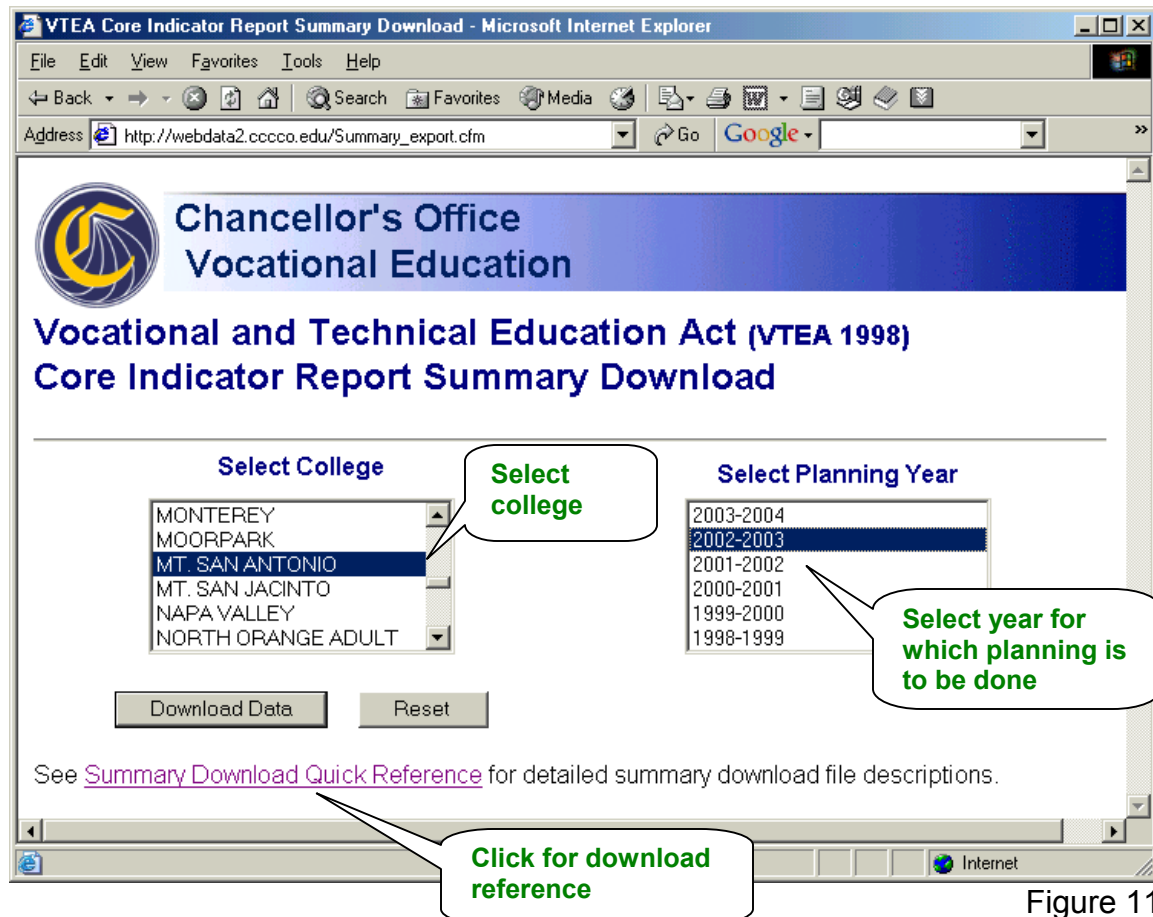


Figure 11

Clicking on “[Summary Download Quick Reference](#)” opens the following page of description which 1) identifies core indicator data years related to the selected planning year, 2) provides examples of how to use the data, and 3) identifies the types of information displayed within each column of the download.

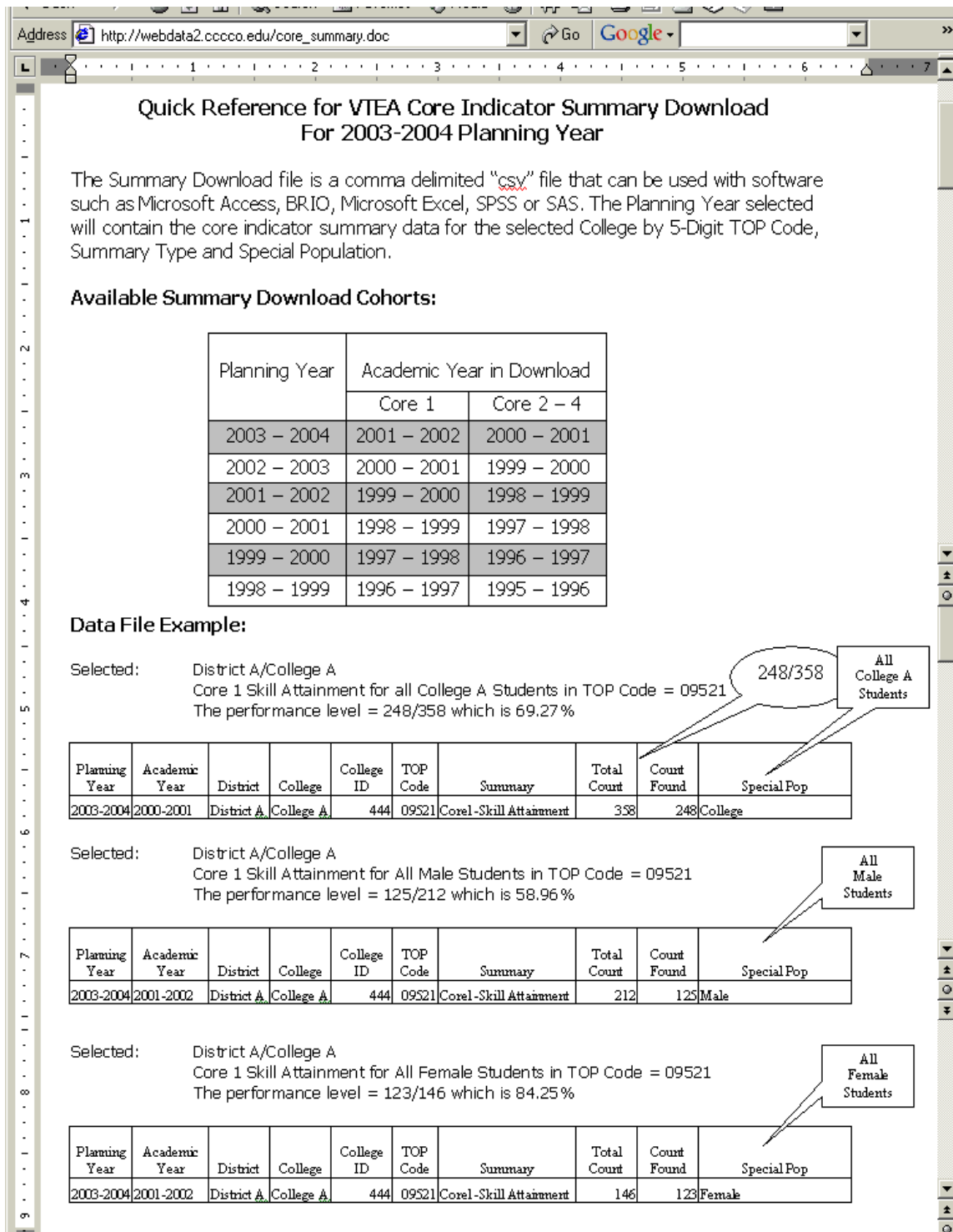


Figure 12

Quick Reference for VTEA Core Indicator Summary Download For 2003-2004 Planning Year

File Layout:

Column Name	Size	Description
Planning Year	Char 9	VTEA Planning Year
Academic Year	Char 9	Academic Year used for collection of Core Indicator performance data
District	Char 21	District Name
College	Char 21	College Name for the aforementioned district
College ID	Char 3	3-digit MIS assigned College Code
TOP Code	Char 5	5-digit TOP Code
Summary	Char 50	Core Indicator Summarized: <ul style="list-style-type: none"> Core1-Skill Attainment Core2-Completions (Unduplicated count) <ul style="list-style-type: none"> AA/AS (Completions Detail Information) CERTIFICATE (Completions Detail Information) COMPLETERS (Same as Core2 Completions Number) CSU_UC (Completions Detail Information) MILITARY (Completions Detail Information) Core3-Placement Core3-Retention Core4-Non-Trad Completer Core4-Non-Trad Participant
Denominator (Total)	Integer	Specifications Per http://misweb.cccco.edu/voc_ed/vtea/VTEAQuickReferencev3.htm
Numerator (Count)	Integer	Specifications Per http://misweb.cccco.edu/voc_ed/vtea/VTEAQuickReferencev3.htm
Special Pop	Char 40	Special Population Categories: <ul style="list-style-type: none"> Female Male Unknown Non-traditional Displaced Homemaker Economically Disadvantaged Limited English Proficiency Single Parent Students with Disabilities Technical Preparation College District Statewide

Technical Questions on Download:

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Myrna Huffman (mhuffman@ccccc.edu)
916-327-2246

Figure 12 (cont'd)

The actual data download screen appears as a long listing of student outcomes by statewide, district and college, and with mixed TOP codes. The data is easily organized into program displays by saving as an Excel spreadsheet and sorting the TOP column.

Address: http://webdata2.cccco.edu/Core_Download/8512002-2003.csv

	A	B	C	D	E	F	G	H	I	J	K
	Planning Year	Academic	District	College	College ID	TOP Code	Summary	Total Count	Count Four	Special Pop	
2	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9563	CSU_UC	496	28	Statewide	
3	2002-2003	1999-2000	MT. SAN	MT. SAN	851	1092	CSU_UC	68	2	Statewide	
4	2002-2003	1999-2000	MT. SAN	MT. SAN	851	10300	CSU_UC	351	59	Statewide	
5	2002-2003	1999-2000	MT. SAN	MT. SAN	851	1120	CSU_UC	96	43	Statewide	
6	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9501	CSU_UC	150	6	Statewide	
7	2002-2003	1999-2000	MT. SAN	MT. SAN	851	12100	CSU_UC	250	32	Statewide	
8	2002-2003	1999-2000	MT. SAN	MT. SAN	851	12500	CSU_UC	1763	235	Statewide	
9	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9342	CSU_UC	394	33	Statewide	
10	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9580	CSU_UC	104	7	Statewide	
11	2002-2003	1999-2000	MT. SAN	MT. SAN	851	5142	CSU_UC	208	11	Statewide	
12	2002-2003	1999-2000	MT. SAN	MT. SAN	851	8090	CSU_UC	109	28	Statewide	
13	2002-2003	1999-2000	MT. SAN	MT. SAN	851	13050	CSU_UC	781	82	Statewide	
14	2002-2003	1999-2000	MT. SAN	MT. SAN	851	5110	CSU_UC	340	30	Statewide	
15	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9565	CSU_UC	407	5	Statewide	
16	2002-2003	1999-2000	MT. SAN	MT. SAN	851	5020	CSU_UC	3242	1330	Statewide	

Figure 13

The data above is sorted by program TOP code in the spreadsheet below and shows some of the CSU-UC transfer, military enlistment, completer, certificate recipient, AA/AS degree recipient, special populations breakout and core indicator information available.

	A	B	C	D	E	F	G	H	I	J	K
	Planning Year	Academic	District	College	College ID	TOP Code	Summary	Total Count	Count Four	Special Pop	
1786	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CSU_UC	1588	127	Statewide	
1787	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CSU_UC	37	4	District	
1788	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CSU_UC	37	4	College	
1789	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CSU_UC	37	4	Male	
1790	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CSU_UC	5	0	Students with Disabilities	
1791	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CSU_UC	16	2	Economically Disadvantage	
1806	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	COMPLET	5	1	Students with Disabilities	
1807	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	AA/AS	37	6	College	
1808	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	COMPLET	16	9	Economically Disadvantage	
1809	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	COMPLET	37	19	District	
1810	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	AA/AS	37	6	Male	
1811	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CERTIFICA	37	11	District	
1812	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	AA/AS	5	0	Students with Disabilities	
1813	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	AA/AS	16	2	Economically Disadvantage	
1814	2002-2003	1999-2000	MT. SAN	MT. SAN	851	9340	CERTIFICA	16	6	Economically Disadvantage	
1856	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	348	296	Economically Disadvantage	
1857	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	51	42	Students with Disabilities	
1858	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	15	15	Limited English Proficiency	
1859	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	92	76	Non-traditional	
1860	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	32735	24252	Statewide	
1861	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	64	46	Technical Preparation	
1862	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	888	729	District	
1863	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	888	729	College	
1864	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	92	76	Female	
1865	2002-2003	2000-2001	MT. SAN	MT. SAN	851	9340	Core1-Skil	796	653	Male	

Figure 14

Chancellor's Office Data Mart

The Chancellor's Office Data Mart offers a variety of student outcome data for both vocational programs and academic disciplines. Student demographics, retention and success rates for all disciplines, and awards for identifiable programs are available. The data can be further segmented by gender, ethnicity and age group.

The Chancellor's Office Data Mart is easily accessed at:

www.cccco.edu

- then click Reports (left side)
- then click Chancellor's Office Data Mart (top of list)
- the following page appears where you make a variety of selections to create a customized data display of interest

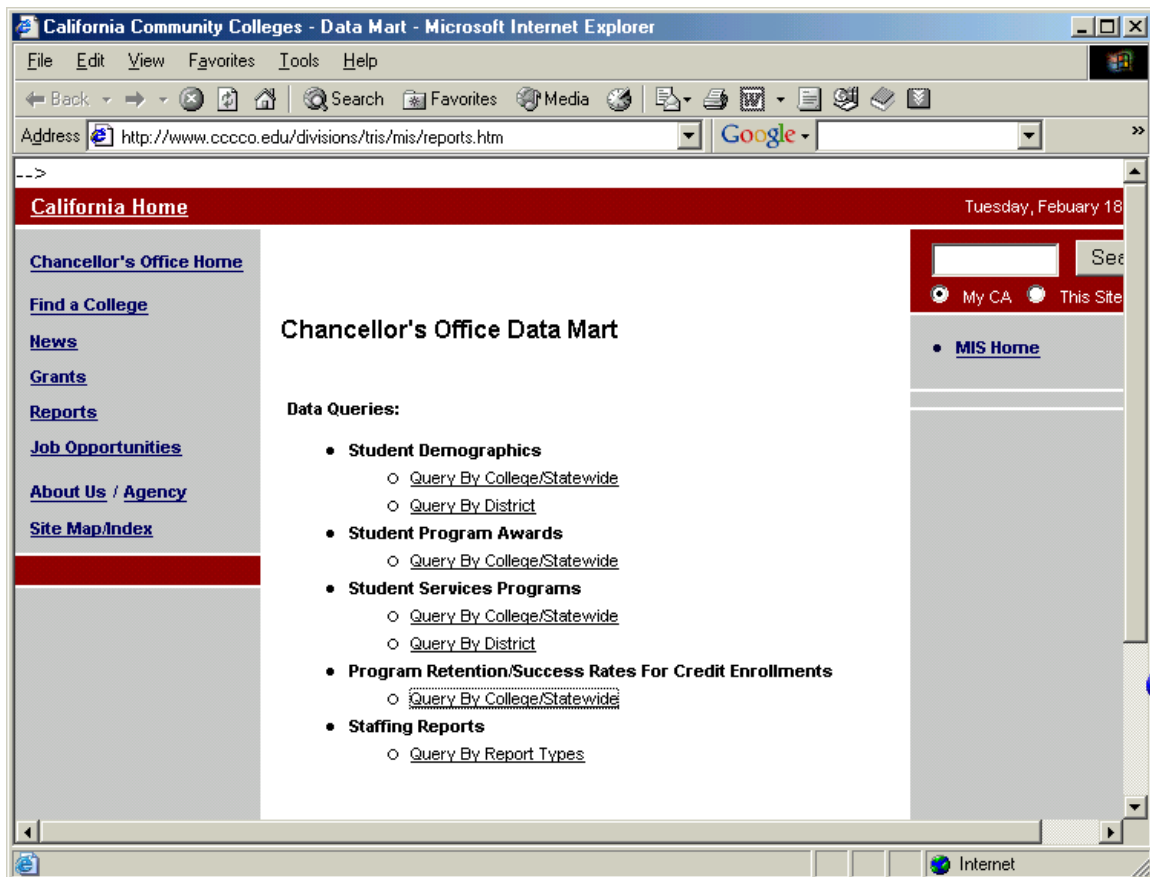
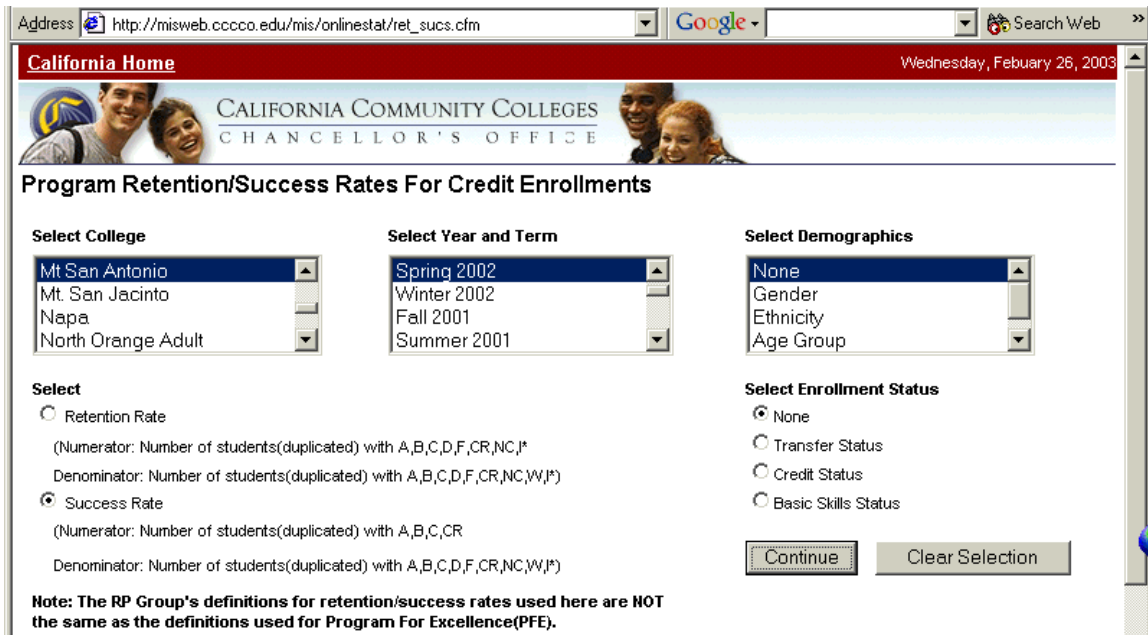


Figure 15

If you click on Query by College/Statewide under the heading Program Retention/Success Rates for Credit Enrollments, the next frame is:

■ Program Retention/Success Rates for Credit Enrollments

Unlike Core Indicator 1, Data Mart Success Rate is for SAM A-E courses. Also note that here success is identified as A, B, C or CR grade count divided by total enrollment in the program/discipline. Now select the college, semester, demographic and other options of interest:



Address http://misweb.cccco.edu/mis/onlinestat/ret_sucs.cfm Google Search Web

California Home Wednesday, February 26, 2003

Program Retention/Success Rates For Credit Enrollments

Select College
 Mt San Antonio
 Mt. San Jacinto
 Napa
 North Orange Adult

Select Year and Term
 Spring 2002
 Winter 2002
 Fall 2001
 Summer 2001

Select Demographics
 None
 Gender
 Ethnicity
 Age Group

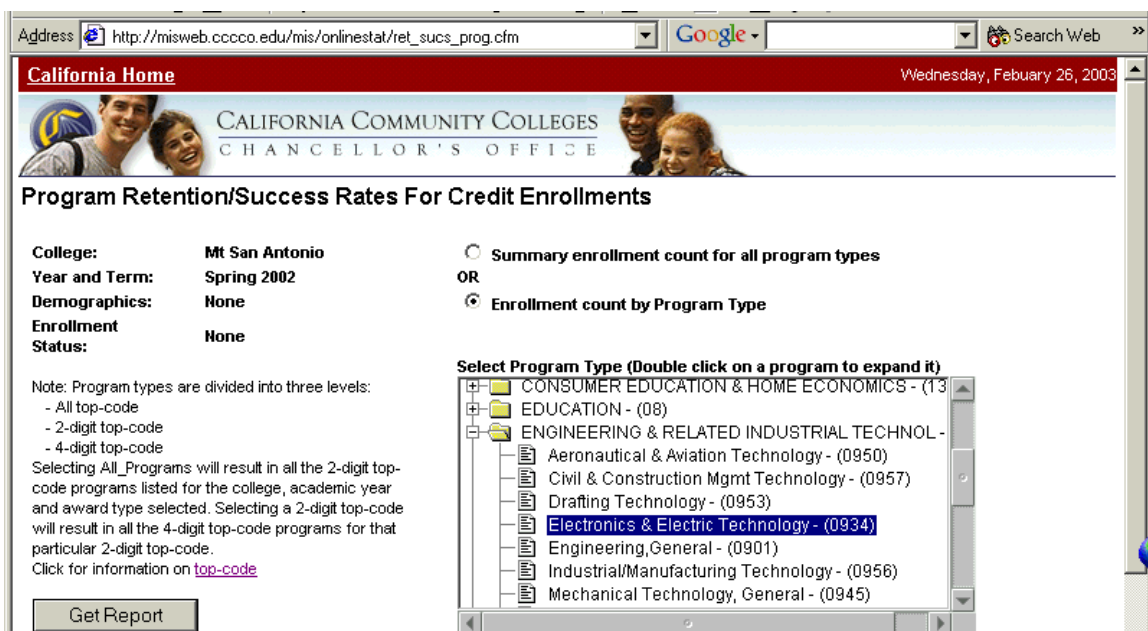
Select
☐ Retention Rate
 (Numerator: Number of students(duplicated) with A,B,C,D,F,CR,NC,I*)
 Denominator: Number of students(duplicated) with A,B,C,D,F,CR,NC,W,I*)
☒ Success Rate
 (Numerator: Number of students(duplicated) with A,B,C,CR
 Denominator: Number of students(duplicated) with A,B,C,D,F,CR,NC,W,I*)

Select Enrollment Status
☒ None
☐ Transfer Status
☐ Credit Status
☐ Basic Skills Status

Note: The RP Group's definitions for retention/success rates used here are NOT the same as the definitions used for Program For Excellence(PFE).

Figure 16

Then the following frame appears for additional options and 2, 4 or 6-digit TOP code program or discipline selection:



Address http://misweb.cccco.edu/mis/onlinestat/ret_sucs_prog.cfm Google Search Web

California Home Wednesday, February 26, 2003

Program Retention/Success Rates For Credit Enrollments

College: Mt San Antonio
Year and Term: Spring 2002
Demographics: None
Enrollment Status: None

☐ Summary enrollment count for all program types
 OR
☒ Enrollment count by Program Type

Select Program Type (Double click on a program to expand it)

- [-] CONSUMER EDUCATION & HOME ECONOMICS - (13)
- [-] EDUCATION - (08)
- [-] ENGINEERING & RELATED INDUSTRIAL TECHNOLOGY - (09)
- [-] Aeronautical & Aviation Technology - (0950)
- [-] Civil & Construction Mgmt Technology - (0957)
- [-] Drafting Technology - (0953)
- [-] **Electronics & Electric Technology - (0934)**
- [-] Engineering, General - (0901)
- [-] Industrial/Manufacturing Technology - (0956)
- [-] Mechanical Technology, General - (0945)

Note: Program types are divided into three levels:
 - All top-code
 - 2-digit top-code
 - 4-digit top-code
 Selecting All_Programs will result in all the 2-digit top-code programs listed for the college, academic year and award type selected. Selecting a 2-digit top-code will result in all the 4-digit top-code programs for that particular 2-digit top-code.
 Click for information on [top-code](#)

Figure 17

Selection of the 6-digit Electronics & Electrical Technology program would reveal:
 Success rate (count and percent) for that specific program:

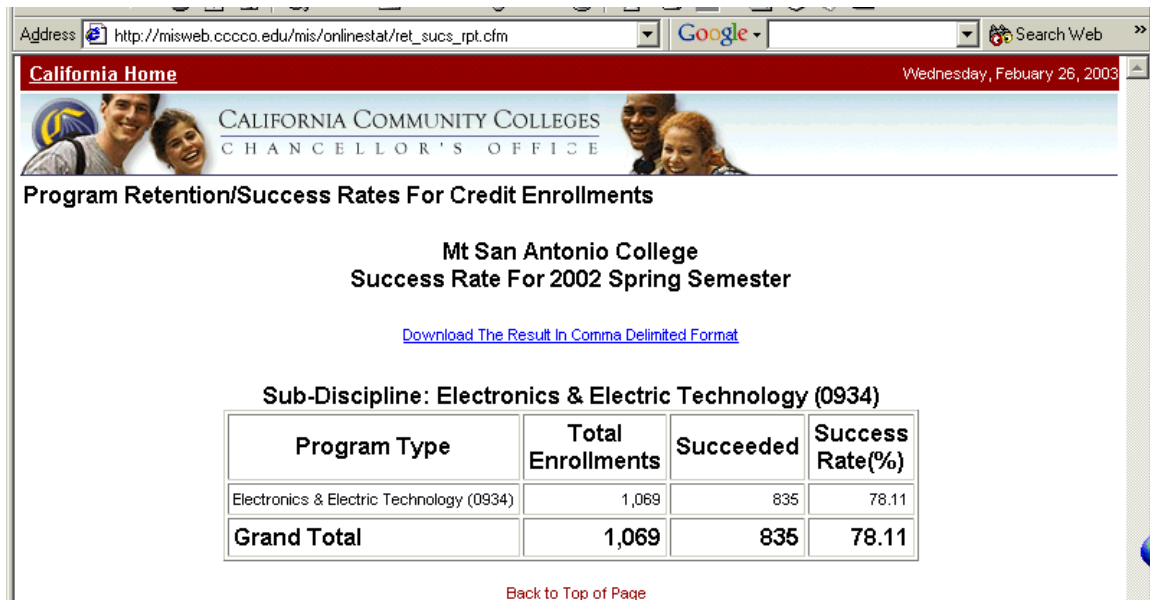


Figure 18

Had you structured your query to segregate enrollment and success rate by age group, the data display would be:

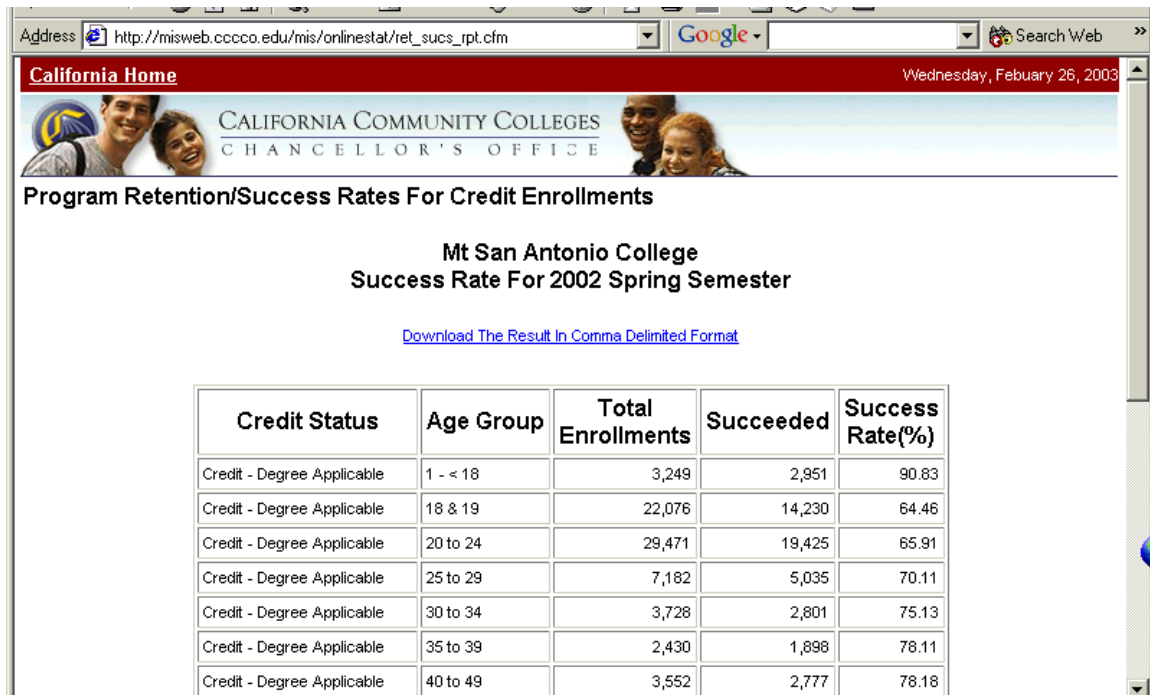


Figure 19

Credit - Degree Applicable	50 +	1,442	1,146	79.47
Credit - Degree Applicable	Unknown	10	8	80.00
Credit - Not Degree Applicable	1 - < 18	166	94	56.63
Credit - Not Degree Applicable	18 & 19	2,523	1,320	52.32
Credit - Not Degree Applicable	20 to 24	2,193	1,299	59.23
Credit - Not Degree Applicable	25 to 29	839	558	66.51
Credit - Not Degree Applicable	30 to 34	479	312	65.14
Credit - Not Degree Applicable	35 to 39	352	232	65.91
Credit - Not Degree Applicable	40 to 49	424	294	69.34
Credit - Not Degree Applicable	50 +	116	83	71.55
Credit - Not Degree Applicable	Unknown	2	2	100.00
Grand Total		80,234	54,465	67.88

[Back to Top of Page](#)

Figure 19 (cont'd)

The **Chancellor's Office Data Mart** offers a large variety of customized data displays. Mix the options to produce an organized display of your student outcome data.

Organizing the data in a comparison matrix that displays the outcome indicators over time will provide insights for program improvement. Useful comparisons are program/discipline to program/discipline within a college, program/discipline to program/discipline across colleges, and within a single college program/discipline over time.

Labor Market Employment Data by County (unduplicated)

Employment Development Department (EDD)

Community college occupational programs require supporting labor market information for their implementation and continuation. The California Employment Development Department (EDD) provides a huge database of information about employment outlook projections, job descriptions and wages/salaries that is useful for occupational and economic development program analysis.

Sometimes frustrating for community college faculty is the discovery that not all job titles are available. In this case faculty will rely on employment outlook information developed with their program advisory committee and industry or government contacts. New and emerging occupations will typically be short of desired data.

EDD Employment Data can be accessed at:

www.calmis.ca.gov

- where the following screen will appear

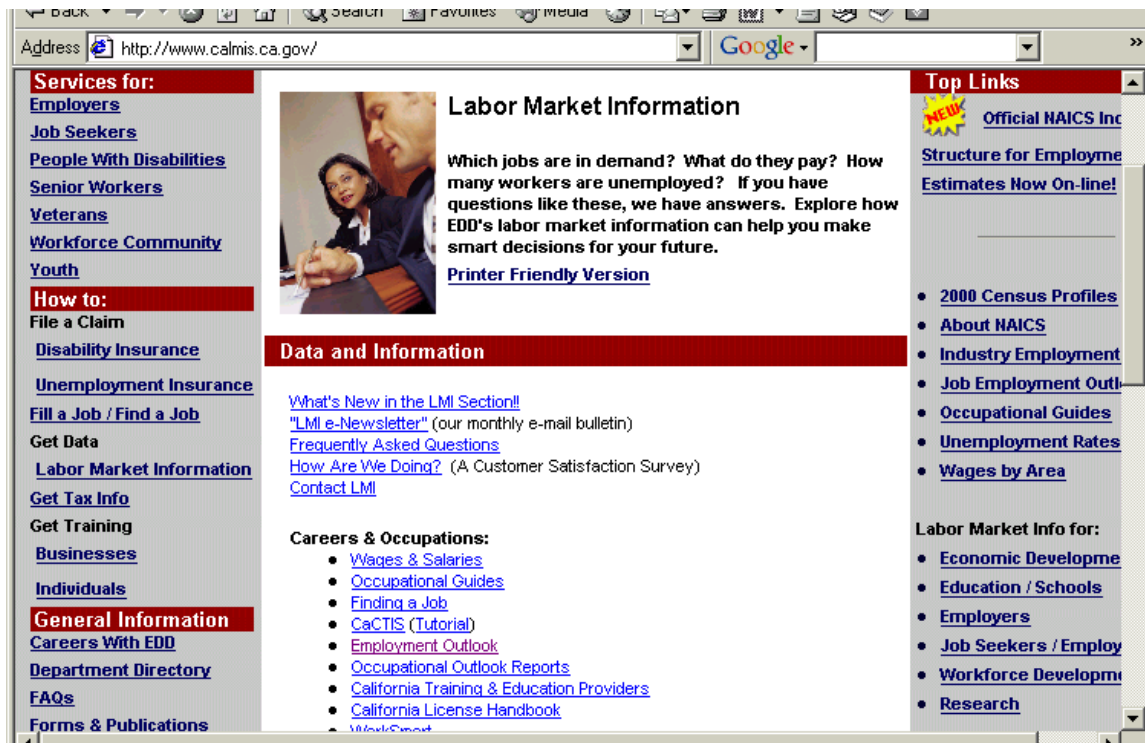


Figure 20

You can easily spend hours scrolling and clicking on the long list of information links here. Better, just use the addresses following for locating useful data.

www.calmis.ca.gov/htmlfile/subject/occproj.htm

- this provides the following labor market projections by County and Job Title (unduplicated count)

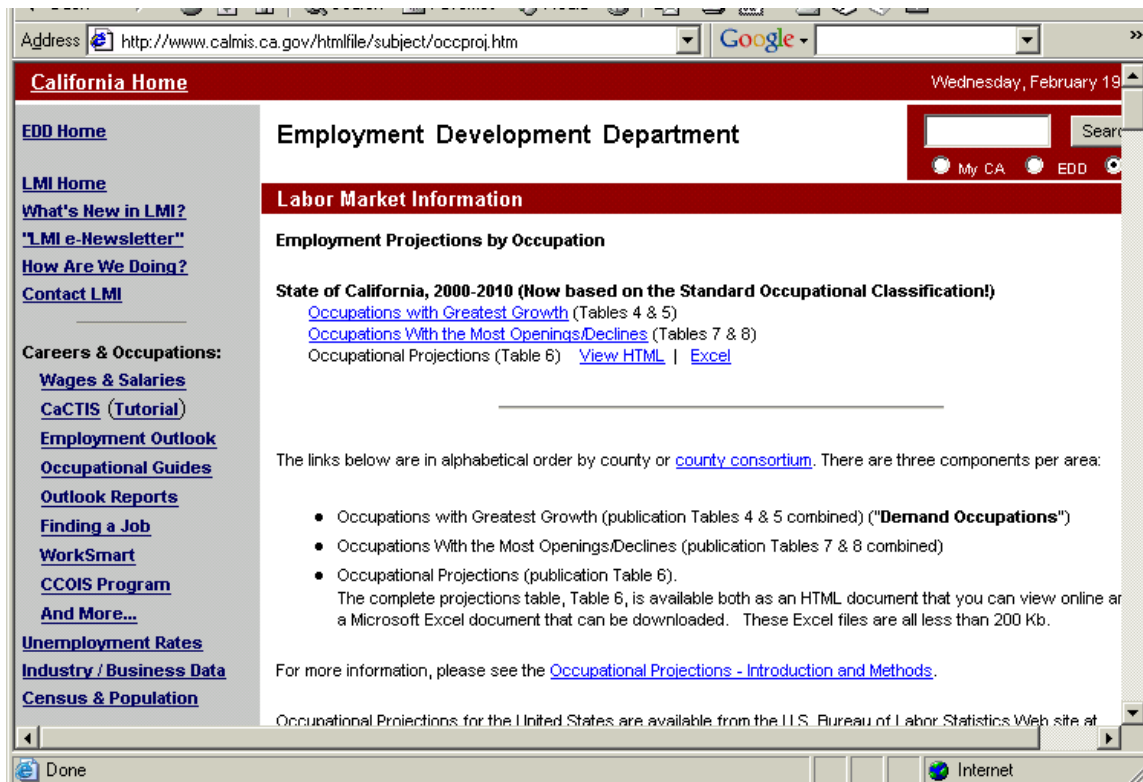


Figure 21

Scrolling down the page will bring you to click-on links to County or Metropolitan Statistical Area (MSAs) data. This may be your more accurate labor market information due to the unduplicated count for the Job Title within the geographic area. Build the labor market data by adding that for each county within the college district or employment region of interest.

Data will display as:

Labor Market Information								
Los Angeles County - Occupational Employment Projections , 1999-2006								
"Projections and Planning Information", Module D, Table 6								
Download an Excel version of this file.								
Line #	CA OES Code	Occupational Title (Definitions)	Annual Averages(1) 1999(2) 2006		Absolute Change	Percent Change	Openings Due to Separations	Educ (BLS)
1		TOTAL, ALL OCCUPATIONS	4,002,900	4,511,200	508,300	12.7	707,160	
2	10000	MANAGERIAL & ADMINISTRATIVE	271,850	305,130	33,280	12.2	35,090	
3	13002	FINANCIAL MANAGERS	21,790	23,830	2,040	9.4	2,480	WORK BACHE
4	13005	PERSONNEL, TRAINING, LABOR-REL MGRS	7,100	8,080	980	13.8	1,230	WORK BACHE
5	13008	PURCHASING MANAGERS	6,360	6,760	400	6.3	1,020	WORK BACHE

Figure 22

Note that educational/training requirements are identified in the far right column.

Another useful labor market information address is:

www.calmis.ca.gov/htmlfile/programs/cocccc/Intro.htm

- this provides labor market projections by County and by TOP code (possibly duplicated count as any one Job Title may occur within several TOP codes)

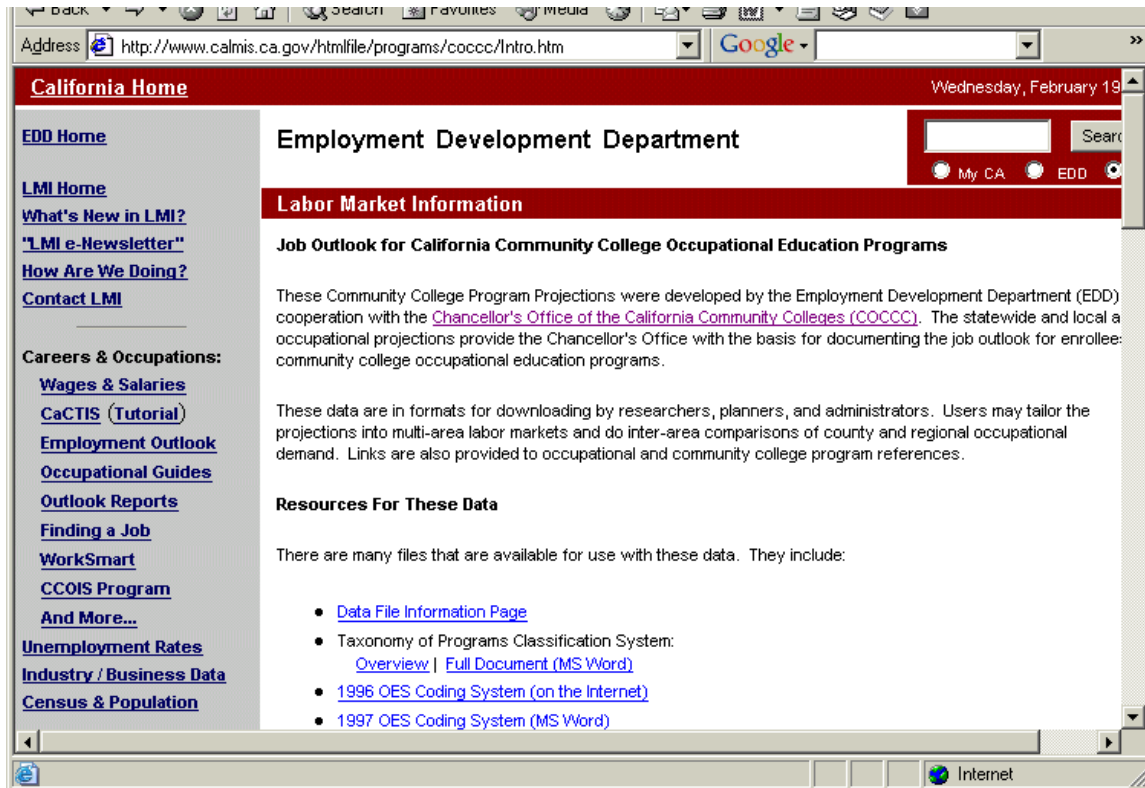


Figure 23

Again, scroll down the page to locate the county or MSA of interest. The data will display as:

Table 2 LOS ANGELES COUNTY County TOP Projections 1999-2006 by 4 digit TOP Code									
County	TOP Code	Taxonomy of Programs (TOP Category)	Est. 1999	Proj'd 2006	Job Growth	Seps	Growth & Seps	Proj. Frame	
19 LOS At0102.00		Animal Science	4450	4950	500	550	1050	99-06	
19 LOS At0103.00		Plant Science	110	130	20	30	50	99-06	
19 LOS At0109.00		Ornamental Horticulture	29430	34530	5100	6740	11840	99-06	
19 LOS At0112.00		Agriculture Business, Sales and	4370	5430	1060	830	1890	99-06	
19 LOS At0114.00		Forestry	1260	1350	90	200	290	99-06	
19 LOS At0115.00		Natural Resources	1030	1120	90	150	240	99-06	
19 LOS At0116.00		Agricultural Power Equipment T	970	1000	30	200	230	99-06	
19 LOS At0201.00		Architectural Technology	7320	7920	600	1280	1880	99-06	
19 LOS At0202.00		Architectural Model Building	130	140	10	30	40	99-06	
19 LOS At0299.00		Other Architecture & Environ D	9780	10740	960	1850	2810	99-06	
19 LOS At0430.00		Biotechnology & Biomedical Tec	1020	1140	120	170	290	99-06	
19 LOS At0501.00		Business and Commerce, General	28910	31860	2950	3980	6930	99-06	
19 LOS At0502.00		Accounting	67340	67830	490	8920	9410	99-06	
19 LOS At0504.00		Banking and Finance	56170	62140	5970	10130	16100	99-06	
19 LOS At0506.00		Business Management	229310	259930	30620	35870	66490	99-06	
19 LOS At0508.00		Marketing & Distribution	42000	48070	6070	8500	14000	99-06	

Figure 24

One other helpful labor market information location that allows multiple county and multiple job title selection is:

www.lmi4ed.ca.gov/



Figure 25

For this example, if Labor Force were clicked to select, you would then get a screen allowing selection of up to five counties. If Los Angeles, Orange and Ventura were selected, the next screen to display is:

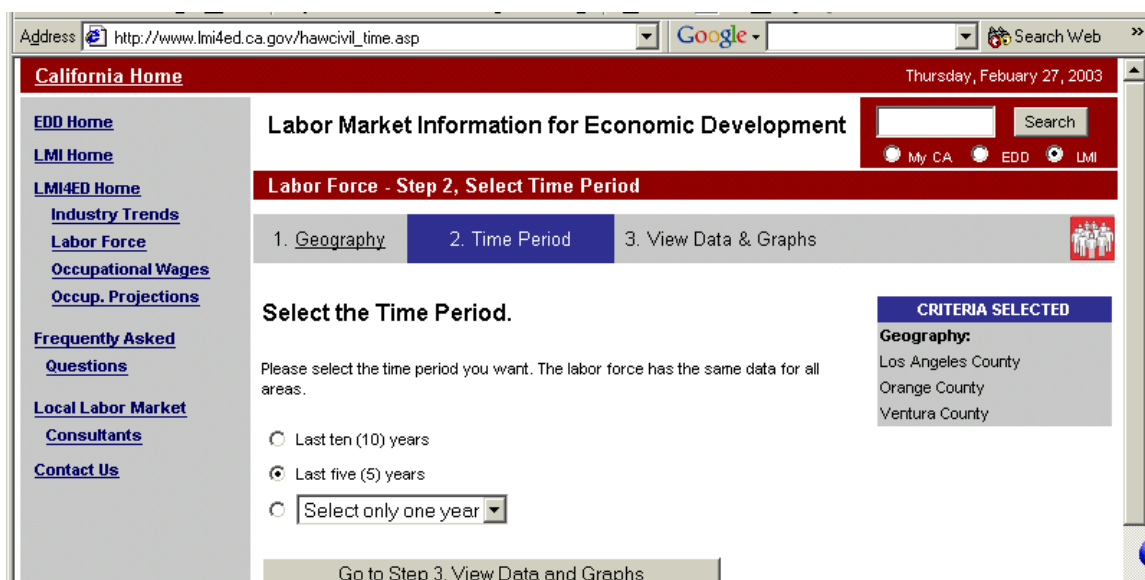


Figure 26
Continuing, you get a data display with a variety of table options that display as:

Address http://www.lmi4ed.ca.gov/hawcivil_data_Geo.asp Google Search Web

GEOGRAPHY: Los Angeles County [View the Graph](#)

Labor Force	1997	1998	1999	2000	2001
Labor Force	4,491,900	4,647,600	4,662,400	4,761,400	4,875,200
Employment	4,184,800	4,343,300	4,389,300	4,506,100	4,598,200
Unemployment	307,100	304,300	273,000	255,300	277,000
Unemployment Rate	6.8%	6.5%	5.9%	5.4%	5.7%

GEOGRAPHY: Orange County [View the Graph](#)

Labor Force	1997	1998	1999	2000	2001
Labor Force	1,385,100	1,435,100	1,471,700	1,511,000	1,537,100
Employment	1,339,900	1,393,700	1,432,700	1,472,700	1,490,800
Unemployment	45,200	41,400	39,000	38,300	46,300
Unemployment Rate	3.3%	2.9%	2.6%	2.5%	3.0%

GEOGRAPHY: Ventura County [View the Graph](#)

Labor Force	1997	1998	1999	2000	2001
Labor Force	381,500	388,300	397,400	413,200	419,800
Employment	356,500	366,800	378,400	394,600	400,900
Unemployment	25,000	21,600	19,000	18,700	18,900
Unemployment Rate	6.5%	5.6%	4.8%	4.5%	4.5%

Figure 27
Scrolling further down this page reveals a series of graphical presentations of the above data such as:

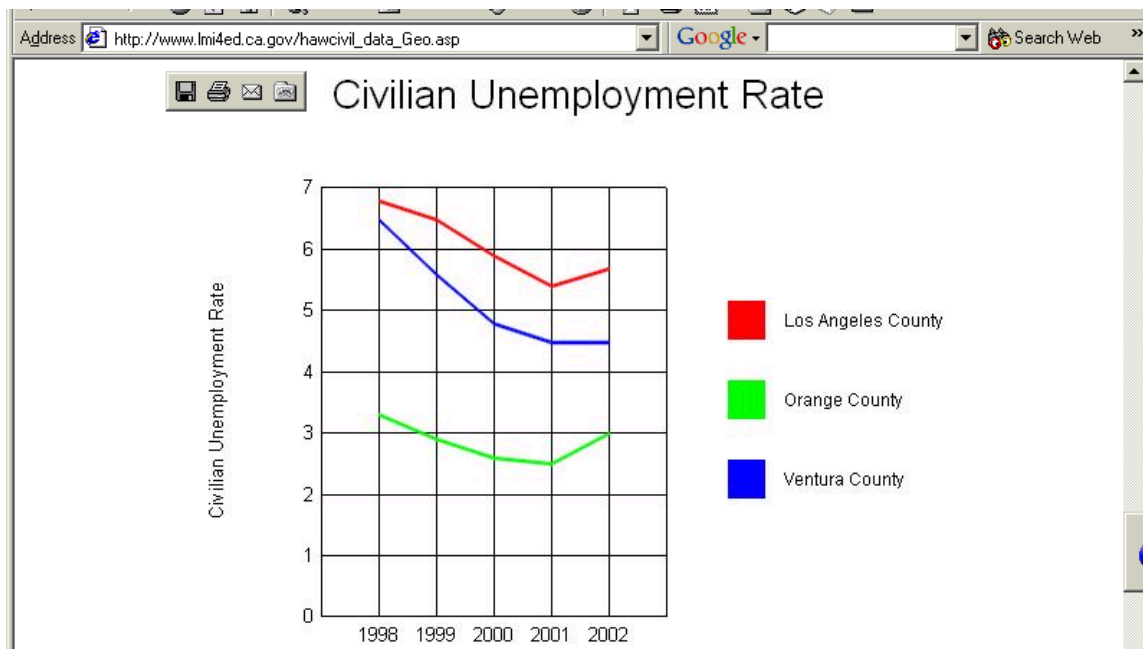


Figure 28

Full data displays of labor market information for each county in Excel format can be linked from the very bottom of this page.

PART IV- Appendix

SAM Codes A-E/ TOP Codes 2, 4, 6-Digit

Analysis Worksheet

Acronyms

Training Handout #1: Instructional Program Improvement Training Guide

Training Handout #2: Core Indicators Basic Academy

SAM Codes A – E/ TOP Codes 2, 4, 6-Digit

SAM is for Student Accountability Model classifications of occupational courses. This system developed in 1984 is still in use today.

Occupational Course: an educational course which is intended to develop skills and related knowledge for job performance, is part of a course sequence of an occupational program offered by the college, and is designed primarily for job preparation and upgrading or updating and not for general educational purposes.

SAM “A”: **Apprenticeship**. A course designed for indentured apprenticeships and must have the approval of the State of California Department of Industrial Relations, Division of Apprenticeship Standards.

SAM “B”: **Advanced Occupational**. A course taken in the advanced stages of an occupational program. Typically a course that is offered in only one occupational area, and one which clearly identifies it's taker as a major in this area. An occupational program would have no more than two SAM “B” courses, and each must have a SAM “C” prerequisite course in the same area.

SAM “C”: **Clearly Occupational**. A course taken in the middle stages of an occupational program and of sufficient difficulty as to discourage “drop-ins”. These courses may be offered to serve several occupational programs within a broad occupational area (business, agriculture, engineering). SAM “C” designation is also for courses not meeting the SAM “B” criteria within any occupational program. Entry-level job skills are gained.

SAM “D”: **Possibly Occupational**. A course taken in the beginning stages of an occupational program and occupational survey courses.

SAM “E”: **Non-occupational**. Non-occupational courses including Cooperative Work Experience, unless the Work Experience course is tied to a specific occupational program where it would be identified as SAM “C”.

TOP Codes, 2-4-6 Digit

TOP codes are Taxonomy of Programs identities of educational programs. This system establishes numeric identifiers of educational programs.

- The 2-digit level groups programs broadly into occupations (09-Engineering).
- The 4-digit level better defines occupational areas within the broader occupation (0948- Automotive Technology, 0950- Aeronautical Technology).
- The 6-digit level best defines specific occupations and vocational programs (094800- Automotive Technology, 094820- Collision Repair, 095010- Aviation Airframe Mechanic, 09530- Commercial Pilot).

Analysis Worksheet

For Data Based Instructional Program Improvement Analysis

STEP-1: Identify program GOALS or KEY PERFORMANCE INDICATORS

Then prioritize by importance as Student Learning Outcomes. Consider indicators of participation, achievement, completion, employment or transfer.

Priority: Goal or Key Indicator:

*

*

STEP-2: Analyze program in terms of Student Outcomes

Look for differences in the data indicating program strengths, weaknesses, gaps.

a) Compare with Student Outcomes in OTHER PROGRAMS

	Ind A	Ind B	Ind C	Ind D	Ind E	Ind F
This Program						
Program X						
Program Y						
Program Z						

b) Compare TRENDS within the program over time, and with GOALS

	Ind A	Ind B	Ind C	Ind D	Ind E	Ind F
Goal level						
Current year						
Prior year						
Prior year						

c) Compare SPECIAL POPULATIONS vs. ALL STUDENTS outcomes

	Ind A	Ind B	Ind C	Ind D	Ind E	Ind F
All students						
Non-traditional						
Disabled						
Displaced homemakers						
Limited English						
Economic Disadvantaged						
Single parents						

STEP-3: Identify ROOT CAUSES for discovered program weaknesses, gaps

List possible root causes for each weakness, gap discovered. Select those within control of the program. Prioritize among those from most to least critical, impacting.

Program weakness, gap:

Data Indicator:

- circle those within control of the program
- number priority of those circled which are most critical, impacting

STEP-4: Select PROGRAM IMPROVEMENT STRATEGIES for the higher priority program weaknesses, gaps. Consider Effective Practices models.

What:	When:	How:	Who:
-------	-------	------	------

Weakness, gap #1:

Improvement strategy a)

Improvement strategy b)

Improvement strategy c)

What:	When:	How:	Who:
-------	-------	------	------

Weakness, gap #2:

Improvement strategy a)

Improvement strategy b)

Improvement strategy c)

What:	When:	How:	Who:
-------	-------	------	------

Weakness, gap #3:

Improvement strategy a)

Improvement strategy b)

Improvement strategy c)

STEP-5: PILOT implementation of the most critical few. If strategy demonstrates success in improving student outcomes, then implement program- wide. Otherwise revise or replace strategy and pilot again.

Weakness, gap #x:

Strategy to pilot:

Student outcome to measure:

Successful if measure (does what):

If successful, what is needed to implement program-wide, when:

LABOR MARKET INFORMATION: the more informative review of EDD information is by COUNTY and by JOB TITLE (unduplicated count). You can also review by COUNTY and by TOP (may be duplicated count as some job titles are in more than one TOP). The best information may come from local economic development corporations or county economic development offices.

County: _____ Program/TOP: _____

	# jobs projected	year/year	wage	training required
Job Title: _____				
Job Title: _____				
Job Title: _____				
Job Title: _____				
Job Title: _____				

Occupational guidelines for job descriptions for each job title identified:

Acronyms

CCCCO	California Community Colleges Chancellor's Office
EOPS	Economic Opportunity Program and Services
FTE	Full-time equivalent
FTEF	Full-time equivalent faculty (actual teaching load divided by teaching load requirement for one full-time faculty)
FTES	Full-time equivalent student (total student contact hours divided by the number of student contact hours expected of one full-time student)
IPEDS	Integrated Postsecondary Education Data System
MIS	Management Information System
SAM	Student Accountability Model ... indicates course level of difficulty and sequence in a vocational program
TOP	Taxonomy of Program Code ... numeric identifier for programs/disciplines
WIA	Workforce Investment Act
VTEA	Vocational and Technical Education Act

TRAINING HANDOUT #1: Instructional Program Improvement Resource Guide

PART – I: Key Performance Model for Program Analysis & Improvement A Five-step Program Analysis Process

1. Document program results in terms of Key Performance Indicators that show Student Learning Outcomes (such as enrollment, retention, skill attainment, GPA, completions, local survey results, employment and transfer)
2. Analyze documented Key Performance Indicators to discover differences in performance and understand components of student success by:
 - Comparison among/across programs
 - Comparison within a program over time (trends)
 - Comparison against standards or goals
3. Identify Root Causes of differences in performance and group by:
 - Root causes within control of the program (prioritize these by those most critical or impacting)
 - Root causes beyond control of the program
4. Select best solution strategies...consult Effective Practices
5. Pilot solution strategies 1st ... evaluate... then implement those that work

PART – II: Considering Special Populations (use same indicators as Part – I)

- *Students preparing for gender imbalanced or non-traditional employment
- *Students with disabilities
- *Students identified as displaced homemakers
- *Students with barriers to educational achievement, including limited English proficiency
- *Students from economically disadvantaged families
- *Students who are single parents, or single pregnant women

PART – III: Data Location and Access

VTEA Core Indicator Data

- * www.cccco.edu
- * then click Reports (left side)
- * then click VTEA Core Indicator Reports
- * then click VTEA Core Indicator Reports
- * arrive at Core Indicator Report Selection

Chancellor's Office Data Mart

- * www.cccco.edu
- * then click Reports (left side)
- * then click Chancellor's Office Data Mart
- * arrive at Data Mart page

Labor Market Information

- * www.calmis.ca.gov/htmlfile/programs/coccc/Intro.htm
labor market info by county and by TOP (possible duplicated count)
- * www.calmis.ca.gov/htmlfile/subject/ocproj.htm
labor market info by county and by JOB TITLE (unduplicated count)
- * www.calmis.ca.gov/
Employment Development Department (EDD) labor market home page
- * www.lmi4ed.ca.gov/
labor market info by MULTIPLE-counties and MULTIPLE-JOB TITLES

GENDER RATIOS for Determining Non-traditional (Gender Imbalanced) Programs

- * http://misweb.cccco.edu/voc_ed/vtea/Nontraditional.pdf

VTEA Core Indicator SUMMARY Report...for comparison across programs

Print from here only

Set to 75% to see whole page

Click to show or hide program sidebar

Current page number

Click here to expand/contract lists

Click to go to 4-digit program TOP code

Shaded indicates success less than performance goal

Italics indicate less than 10 students

Click to go to 6-digit program TOP code

Summary by: Collegewide for MT. SAN ANTONIO

Program	Care 1 Skill Attainment	Care 2 Completions	Care 3 Placement	Care 3 Retention	Care 3 Completion	Care 3 Help
01 AGRICULTURE	80.4	80.3	88.9	77.3		
02 ARCHITECTURE	68.5	100.0	83.3	60.0		
05 BUSINESS	72.3	85.7	88.0	84.0		
06 COMMUNICATIONS	77.4	66.7	66.0	100.0		
07 COMPUTER & INFORMATION SCIENCE	0	75.0	4	88.9		
08 EDUCATION	8	59.1	3	81.8		
09 ENGINEERING						

VTEA Core Indicator DETAIL Report...for within program trend comparison

Set to 75% to see whole page

Current page number

Click to show or hide program sidebar

Click here to expand/contract lists

Click to go to 4-digit program TOP code

Click to go to 6-digit program TOP code

Highlight and click to go to program

Shaded indicates success less than performance goal

Core Indicator One Skill Attainment

Program	Percent	Count	Total
01 AGRICULTURE	83.57	83.07	82.29
02 ARCHITECTURE	74.54	78.25	75.74
05 BUSINESS			404
06 COMMUNICATIONS			
07 COMPUTER & INFORMATION SCIENCE			
08 EDUCATION			
09 ENGINEERING			
10 FINE AND VISUAL ARTS			
11 HEALTH SERVICES			
12 LAW			
13 PUBLIC AFFAIRS			
14 COMMERCIAL ARTS			

TRAINING HANDOUT #2: Core Indicators Basic Academy

The **FOUR** Core Indicators:

1. Skill Attainment- grade C and above
 - >Grade earned \geq C / total enrollment
 - >Data not included for non-credit or not-for-credit courses
2. Completions- Certificates, Degrees and Transfers
 - >Concentrators earning a degree, certificate (\geq 6-units), or transferring / leavers & completers
 - >Data not included for transfers to private or out-of-state institutions
 - >Lifelong learners excluded from denominator
3. Placement and Employment Retention
 - >Placement... Concentrator employed in at least one quarter or transferred to CSU/UC in year following college / all concentrators
 - >Retention... Concentrator employed in three successive quarters in year following college / all concentrators
 - >Data not included for military, federal government, postal service or out-of-state employment, or for self-employed
4. Equity- Non-traditional (gender imbalanced) Program outcomes
 - >Participation... Non-traditional participants enrolled in program / all participants enrolled
 - >Performance... Non-traditional completers of program / all completers
 - >When enrollments are small, more meaningful analysis may occur from 4-digit TOP data

Completer: earns any degree or certificate, or enrolls in CSU/UC

Concentrator: completes \geq 12-units in specific program including one SAM-C/B

Vocational Leaver: completes \geq 12-units vocational courses SAM A-D and does not show up in any community college in the following year

Lifelong Learner: has already earned a degree or certificate prior to program year

SAM Codes: (Student Accountability Model)

A: apprenticeship B: advanced occupational C: clearly occupational
D: possibly occupational E: non-occupational

TOP Codes: (Taxonomy of Programs)

2-Digit:	09	Engineering		
4-Digit:	0948	Auto Technology	0950	Aeronautical Technology
6-Digit:	094800	Auto Technology	095010	Airframe Mechanic
	094820	Collision Repair	095030	Commercial Pilot

Core Indicator Report Selection:

* www.cccco.edu

* then click Reports (left side)

* then click VTEA Core Indicator Reports ... get VTEA Reports, also Gender Ratio

* then click VTEA Core Indicator Reports ... get Report Selection page for
Summary Reports ... Details Reports ... SAM coding reports

Core Indicator Report Selection

**Chancellor's Office
Vocational Education**

**Vocational and Technical Education Act (VTEA 1998)
Core Indicator**

Form - 2001-02 Final Report
 Summary - College
 Summary - District
 Summary - Statewide
 Summary Detail - College
 Core 1 - Skill Attainment
 Core 2 - Completions
 Core 3 - Placement/Retention
 Core 4 - Nontraditional
 Summary File Download
 Course Voc Status/SAM Code

Select College:
 Select Year:
 Select Form/ Report: Summary - College

*Only Credit Available at this time

Retrieve Report data updated March 21, 2002

Start here for all Summary Reports

Here for Details Reports (3-year trends)

Important! READ THIS FIRST!

Reports have Changed. See [Changes & Enhancements](#)

See your course SAM codes

Click Here for

VTEA Core Indicator SUMMARY Report... NAVIGATING THE REPORTS

Print from here only

Set to 75% to see whole page

Click to show or hide program sidebar

Current page number

Click here to expand/contract lists

Highlight and click to go to category OR college, district, statewide

Click to go to 4-digit program TOP

Shaded indicates success less than performance goal

Italics indicate less than 10 students

Click to go to 6-digit program TOP

Category	Core1 Skill Attainment	Core2 Completions	Core3 Placement	Core3 Retention	Core4 Completion	Core4 Percentage
01 AGRICULTURE	80.4	80.3	88.9	77.3	29.5	48.8
02 ARCHITECTURE	88.5	100.0	83.3	80.0		
05 BUSINESS	72.3	85.7	88.0	84.0		
06 COMMUNICATIONS	77.4	86.7	88.9	100.0		
07 COMPUTER & INFORMATION SCIENCE	0	75.0	84	88.9		
08 EDUCATION	89.1	83	81.8			
09 ENGINEERING						