

Chapter 16



Scaffolding and Foundational Support for College Success: The Role of Prerequisites

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Chapter 16



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In order for students to succeed in California community colleges, it is important that they are given every opportunity to build their education with a well constructed foundation. No one would begin to construct a roof and walls without first creating those foundational components that will form the support and basis of the rest of the project. In this same way, basic skills in reading, writing, mathematics, English as a Second language and study skills are the foundation for success in later coursework. This chapter represents a reality check on the process and environment necessary to create a sturdy and longlasting building (education) for the typical community college student in California.

The vast majority of students in California are very diverse. Many students represent the first person in their family to ever venture into higher education. This is the promise and the vision for California's public higher education goal which represents an unparalleled educational opportunity:



It is the intent of the Legislature that each resident of California who has the capacity and motivation to benefit from higher education should have the opportunity to enroll in an institution of higher education. Once enrolled, each individual should have the opportunity to continue as long and as far as his or her capacity and motivation, as indicated by academic performance and commitment to educational advancement, will lead him or her to meet academic standards and institutional requirements. California Education Code Section 66201

More than any other California higher education segment, the community colleges exemplify open access and opportunity for residents to pursue higher education. Yet what responsibility comes with that access? Do we expect students to create and pursue educational pathways by themselves? How can they accurately determine their own skill and knowledge levels and then project what is necessary to be successful in courses? We assume that students will get help from counselors, yet

according to the SENSE survey, the national Survey of Entering New Student Engagement, 40% of entering students reported seeking advice from family members, friends and peers, compared with 30% of students who met with a college counselor or advisor. Forty-one percent of respondents reported that they did not use advising services of any kind (CCSSE, 2007).

Let's begin with our first reality check. One community college in southern California began to examine their placement assessment data for first time students. This college requires all new students to take an assessment test. They discovered that 93% of their entering students assessed at below college level in English and 100% were below college level in mathematics. All students signing up for an ESL, English, reading or mathematics course are required to get assessed for proper placement. However, this college also allows these same underprepared students to sign up for transferable courses such as Introduction to Anatomy, Human Biological Evolution, Principles of Economics II, Geology, Political and Social History of the United States, The Government of the United States, Contemporary World Affairs, and General Psychology I without any assessments, advisories or any prerequisites. In other words, no direction is included in the catalog. Students without college level reading, writing, ESL and mathematics have open access to register and take these courses. Is it possible that the students will go to a counselor for advice? As we stated above, the research shows that the majority of students in community colleges do not seek advice for registration from counselors.

To fully understand the complexity of the situation, an additional reality check is necessary. Recent data show that simply knowing a student is underprepared is not the whole picture. For instance, if 75-90% of the first-time students in California are testing into a basic skills course in at least one discipline, what does that mean for those students when they register for college level courses that use college level textbooks and expect college level writing or mathematics? And what are the actual skill levels of the underprepared students? Data from the college referenced above concerning the actual level of the students' ability is displayed in Table 1.

TABLE 1				
Fall 2008 College Data on Percentage of Students at Various Assessment Levels				
Term: Fall 2008	English		Math	
	%	N	%	N
Transfer level	7%	170	0%	9
One level below transfer	7%	166	7%	183
Two levels below transfer	29%	723	16%	393
Three or more levels below	57%	1406	77%	1917
Auto Total	100%	2465	100%	2502
This data is courtesy Craig Hayward, Cabrillo College.				

Here's the reality. A recent survey found that 57% of the students registering for the transferable general education courses that have no prerequisites assessed at three levels or more below transfer level in English. Fifty-seven percent! And how would you expect those students to do in these transfer courses with these skills? It does not require a rocket scientist to see that this "open access" is really a ticket to disaster for most of these underprepared students. The Accountability Reporting for California Community Colleges or the ARCC report (2009) indicates that the southern California college in the scenario above has a "Student Progress and Achievement Rate" of only 38% while the

state average is 47%. The persistence rate at this college is only 50.8% while the average amongst their peers is 60.2%. This might indicate that numerous students fail to succeed in completing degrees or transferring and that fewer students persist or return – possibly because they were underprepared. (Appendix 1 provides some additional data about the lack of success of underprepared students in a few select courses.) There is good news about students at this college. For those students that do get into basic skills prerequisite courses, the annual success of their students in those basic skills courses is 50.7% above their peer average of 49.9%. (CCCCO, 2009, pp. 731-735).

Lest you think this is an anecdotal case about a single college, the data below in Table 2 comes from 21 colleges from all around the state. These data indicate that we not only have a high percentage of under-prepared students, we have many students who have assessed at **several** skill levels below college-ready.

TABLE 2 Percentage of Students from 21 California Community Colleges Assessing into Various Levels Below Transfer Fall 2008								
Overall	English		Math		Reading		ESL	
<i>Average based on Count</i>	%	N	%	N	%	N	%	N
Transfer level	23%	13777	17%	10941	27%	5810	0%	0
One level below transfer	28%	17428	20%	12853	39%	8396	6%	248
Two levels below transfer	31%	19027	22%	14361	27%	5710	17%	710
Three or more levels below	18%	10964	41%	26775	7%	1583	77%	3162
Auto Total	100%	61196	100%	64930	100%	21499	100%	4120

*This data is courtesy Craig Hayward, Cabrillo College who compiled it from 21 colleges at this date.

Here’s a final reality check. There are those who argue that it is more important to provide access and not hold students back from transfer level courses. “Students are free to fail,” they’ve been known to say. But do students want this kind of access? Do they expect guidance from those who create the course work and identify the student learning outcomes? Student views on these issues will be discussed later in this chapter. You may be surprised by what they have to say.

How does this situation affect overall enrollment? When we look at enrollment patterns do we find that many of those who got the seats in the class ended up dropping before census? Or are these same students hanging in to get a “W” or perhaps a failing grade at the end of the semester? What about the prepared students who could not register? What about the students who failed, tried again and perhaps again and concluded they were not “college material”? If you look at the data in Appendix 1 you will see some data supplied by DeAnza college on students’ prerequisite abilities prior to taking economics. The least prepared students drop out in the highest percentages and if they remain in the class, they fail at the highest rate. Discussions with the student representatives on

the Student Senate for California Community Colleges reported that failure sends a message of defeat and that repeated failure communicates very negative messages about their ability to reach their goals.

Prerequisite validation and implementation is a key area of basic skills where the organization and structure of the California community colleges, paired with legislative control, has created difficulties. Title 5 (5 CCR § 55003 as shown in Appendix 2) provides a rigorous (many colleges would say onerous) set of regulations with regards to requirements which must be met in order to validate and apply a basic skills prerequisite to a college level course outside of the discipline. What are the requirements for prerequisites? Where did they originate? How are they related to basic skills and student success?



Let's begin with a quiz about prerequisites. Circle True or False to answer the following questions:

1. Most institutions of higher education in the U.S. assign prerequisites based upon faculty expertise and content review, without statistical validation. **True or False**
2. The Mexican American Legal Defense and Education Fund (MALDEF) case resulted in a verdict requiring CCC's to justify and validate prerequisites through content review, statistical analysis and comparability with other similar courses and those requirements. **True or False**
3. It is difficult to find data that suggest that having college level reading or writing increases student success in transferable general education courses. **True or False**
4. CSUs and UCs do not require basic skills prerequisites. **True or False**
5. Students oppose applying prerequisites to courses. **True or False**
6. Prerequisites do not guarantee that students succeed in the target courses to which the prerequisite was applied e.g. college level reading for Sociology. **True or False**

Quiz Answers (They aren't as simple or straightforward as you may think.)

1. **True-** Most institutions of higher education in the U.S. assign prerequisites based upon faculty expertise and content review, without statistical validation.

A search of curriculum texts and procedures at other higher education institutions reveal that throughout the rest of higher education, including CSUs and UCs, prerequisites are the purview of the faculty. The same people who create, design, and deliver the curriculum assign prerequisites appropriate to the courses by professional analysis and content review.

2. **False** - The MALDEF case resulted in a verdict requiring CCC's to justify and validate prerequisites through content review, statistical analysis and comparability with other similar courses and those requirements.

The MALDEF case never went to court. The requirements for statistical validation and the procedures used were an out-of-court settlement by the Chancellor's Office with MALDEF.

3. **False** - It is difficult to find data that suggest that having college level reading or writing increases student success in transferable general education courses.

While it is difficult for some colleges to get specific data, there are colleges that have collected data which show specific courses are valid prerequisites. There is an important relationship between the outcomes or exit skills of the prerequisite course and the skills required within the target course. Availability of data depends most directly upon research ability.

4. **True and False** - CSUs and UCs do not require basic skills prerequisites.

CSUs and UCs select the students that represent the top performing students in the state. They test the student's ability in basic skills disciplines and require the remediation be completed. However, their systems are based upon an assumption that students are college-level prior to taking courses at their institutions.

5. **False** - Students oppose applying prerequisites to courses.

Students do not oppose prerequisites. The Student Senate for California Community Colleges has examined the issue of prerequisites and have many carefully considered opinions about them that will be discussed later in this chapter.

6. **True and False** - Prerequisites do not guarantee that students succeed in the target courses to which the prerequisite was applied e.g. college level reading does not guarantee success in Sociology.

Because multiple variables contribute to or prevent student success, this topic requires a lot of examination. However, data shows that absent certain prerequisite skills, success is unlikely.

What is the Role of Prerequisites?

Prerequisites, corequisites and other limitations on enrollment are indispensable tools for thoughtfully constructing curriculum and programs that help students succeed (ASCCC, 1992; ASCCC, 1997; ASCCC, 2004; Board of Governors, 1993). The Basic Skills Initiative has stimulated re-evaluation of many of our practices and teaching concepts that relate to prerequisites and other limitations on enrollment. The ARCC report indicates that the overall basic skills course success rate in 2007-2008 was only 60.5% (CCCCO, 2009). As data concerning student success have become more public and more analyzed by educational practitioners, many have asked themselves how well prerequisites are working within the disciplines and what the effect of the statistical requirements have been for applying basic skills prerequisites to college level courses outside of the discipline.

California community colleges were established to ensure that all Californians can access higher education. When prerequisites are applied indiscriminately, they may restrict enrollment and may not improve student success. On the other hand, when we fail to correctly direct students because the requirements to create those pathways are so onerous, the very process of prerequisite application creates an untenable educational environment. When students are given little or no direction, and they fail because there is no guidance, and no opportunity to make good decisions, we are doing a great disservice, perhaps closing the door to higher education rather than opening it wider.

Time for another reality check: a check that examines the individual cost in spite of motivation and ability. Here's an example. Kaila showed amazing compassion as a young girl and a proclivity for science and mathematics. Her family and friends observed a natural ability to help others and to combine things she knew about health to real life situations. Everyone told her to go to college and

become a nurse. She was the first in her family to even think about college. By the time she was in high school her grandparents were raising her. She never knew her father and her mother left when she was 13.

Kaila did well in high school and graduated with good grades in English, mathematics and science. She went to the community college and took the assessment test and was placed into mathematics and English two levels below transfer. Meanwhile, she was told that as a nursing major she should get going on her science classes. She signed up for anatomy and was lucky to get in the class. Forty people on the waitlist did not get seats. Unfortunately, she withdrew the sixth week, unable to keep up with the textbook and new terminology; it was like a new language. She struggled in her English classes and got A's in her mathematics class. Several years later, she discovered that she assessed in at college level mathematics but was placed into two levels below college because the counselor assumed from her English scores that she was remedial in both areas.

Kaila signed up for anatomy the next semester, did better and finished with a C, but still felt she had not gotten everything she should have gotten out of the class. She finally made it through the pre-nursing sequence – physiology and microbiology – with one more W. She took English 1A and though she struggled, she found out her writing and reading ability were much improved contributing to a B in microbiology, but it was too late. Unfortunately, the nursing formula counted her withdrawals, resulting in a GPA in science of C+. This was not sufficient to get her into any nursing program. There was no way to make up for the price that her underprepared reading and writing had cost her in the courses required for her major. Time was not Kaila's enemy. Lack of clear guidance to ensure success was. Appropriate prerequisites and guidance, perhaps with tutoring, would have helped her succeed and given her a chance at the formula.

As we stated in the quiz answers, in 1991, a suit was lodged by MALDEF (Mexican American Legal Defense and Educational Fund) against the California community colleges claiming a disproportionate impact on certain student populations as a result of the prerequisite requirements. The complaint was settled out of court, creating our current prerequisite processes which have operated for the last 15 years. The agreement, signed into law, requires content review, statistical analyses, and disproportionate impact studies to validate and apply a prerequisite. Title 5 states:

§55003(e) (e) A course in communication or computation skills may be established as a prerequisite or corequisite for any course other than another course in communication or computation skills only if, in addition to conducting a content review, the district gathers data according to sound research practices and shows that a student is highly unlikely to succeed in the course unless the student has met the proposed prerequisite or corequisite. (The Title 5 regulations are included in Appendix 2).

These validation techniques are required course by course, program by program, college by college. Appendix 3 provides a summary of these levels of scrutiny for validating prerequisites and Appendix 4 provides a detailed excerpt of the requirements. Additional requirements and instructions for applying prerequisites are found in *The Model District Policy on Prerequisites, Corequisites, and Advisories on Recommended Preparation* (Board of Governors) and *Good Practice for the Implementation of Prerequisites* (ASCCC, 1997). Sample statistical analysis by two different colleges following the *Model District Policy on Prerequisites* are found in Appendix 1.

The upshot of these requirements, which are not required in other states, is that California community colleges have very few prerequisites for courses outside of the specific disciplines and very few basic skills prerequisites for transfer level courses. Concern about this situation has been voiced for years through Academic Senate resolutions. A few sample resolutions are found in Appendix 5. The Basic Skills Initiative work and external reports have cited lack of clearly delineated student pathways as a major reason for poor success.

The current labor-intensive statistical requirements for prerequisite validation have resulted in a void of prerequisites for college-level general education courses. No one argues that any restrictions on enrollment should carefully assess need, clearly describe the skills and knowledge students need to learn from a prerequisite to be successful in the target course, and be applied in an attempt to create student success for all student populations. However, the last 15 years without prerequisites has been an experiment of sorts. The number of successful course completions and the number of degrees awarded are themselves a study in disproportionate impact. Students in underserved populations are not achieving academic degrees. Chapter 1 of this handbook describes the need to focus on African American and Hispanic student success. The Academic Senate has several resolutions addressing the important role of prerequisites in student success (see Appendix 5). While assigning a prerequisite to a course cannot guarantee student success, it should at least align with subsequent course work and address the necessary skills and knowledge a student should have. This kind of guidance can only help students, particularly when we know the vast majority are in need of basic skills work to succeed at college level.

But we must ask some question about our system and practices:

Do we allow students to circle through the system, never moving forward toward their goals because we call this lack of direction and guidance open access? Does open access for those very likely to fail, bar access to those qualified to succeed because of seat availability?

Do we neglect to put prerequisites on our major studies and general education courses because they will cause us to lose FTES (full-time equivalent students)? Perhaps we need to consider if it is more important to have a student in a seat until census than to have a student succeed in a course.

Do we fail to require basic mathematics and writing prerequisites in career technical education (CTE) because the students care about employment, not academics, or is it because the programs will dry up from lack of enrollment? Can students be successful in CTE today and later in a vocational employment without these basic skills?

Have we taken the easy way out by creating unenforceable advisories or neglecting prerequisites and advisories altogether because the prerequisite validation process is too onerous?

Are the existing pre-collegiate assessment, matriculation, guidance and prerequisite procedures at our colleges helping students in the way they need it?

The answers to these questions are addressed in some of the following statements and recommendations which are a compilation from the numerous Academic Senate papers and position that faculty have advocated through resolutions (Appendix 5):

- The assessment of student proficiencies benefits our colleges and our students – informing us of students’ needs and ensuring that these needs are incorporated into course planning and scheduling. While some assert that a student “has a right to fail”, the faculty have an obligation to establish a learning environment that is conducive to the success of all students and that does not intentionally increase a student’s chance of failure. Validation processes that are dependent upon student failure are contrary to what faculty are most interested in – aiding their students to achieve their academic goals.
- The identification of requisite entering skills and collection of the required statistical data to establish appropriate prerequisites for student success should not be so onerous or time-consuming that faculty avoid it. On the other hand, there are problems with the statistical validation requirements. Some people are very willing to do the work - but getting a sufficient sample for validation is not possible with smaller course sizes. Some mathematics faculty argue that the statistical models used for prerequisite validation are not good predictors of success regardless of the other issues.
- We must be able to use prerequisites as a means of accurately informing and guiding students as to what skills are needed for success. Effective course sequencing via prerequisites is a means to reduce the chances of failure. College-level courses should expect and require students to use and further develop college-level skills, but there should also be easily identifiable course options for all students – regardless of their skill level -- and the option to challenge the prerequisites, demonstrating that they possess the needed skills.
- Prerequisites should be implemented and enforced appropriately as a means of increasing the likelihood of student success. The establishment of prerequisites should be fair and just – students who have the necessary skills should not find themselves denied course access. On the other hand, decisions regarding prerequisites should be made based on academic considerations, not programmatic or enrollment/apportionment impact.
- It does a disservice to students, our institutions, and the state to not establish the clear minimum expectations of the skills a student should have upon registering for a course. The establishment and enforcement of prerequisites will increase student success and result in an environment that is more conducive to learning – a classroom where all students begin with some minimum level of requisite skills. Faculty will have a better chance of teaching to their best and students will have a better chance to learn in such a setting.

“Properly set prerequisites benefit all: students, faculty, and the college. Students know what is expected of them without being denied access, faculty teach prepared students and have a positive classroom environment, and the college has efficient educational programs” (ASCCC, 1997).

The Academic Senate has taken a strong position concerning re-evaluation of the prerequisite process required in Title 5. In addition these concerns have been shared and input collected from

the Student Senate for California Community Colleges, the Chief Instructional Officers, Chief Student Service Officers and others. It is important to understand the unintended consequences of changes and the unintended consequences of doing nothing and ignoring the existing data. The students input listed below provides food for thought as we continue to explore streamlining student pathways.

Student Views Concerning Prerequisites

Student Senate President Richael Young (2008-2009) summarized the views of the statewide Student Senate on prerequisites:

Student Defense for Prerequisites:

Prerequisites + Guidance = Better Preparedness = Higher Success Rates

Students often enroll in courses for which we are not academically prepared, which hurts us individually and cohesively as a student population in the short-term and long-term. Instituting mandatory placement will increase the likelihood of our success.

Equalizing the “playing field” in the classroom.

Assessing and placing us according to our preparedness will ensure that our class’ skill sets and the curriculum are compatible. It’s otherwise difficult for us to all equally benefit from the instruction when we’re at different levels and our professor is splitting time to meet our various needs.

Student Concern about the Process

Basic skills courses are not seen as relevant to our choices of study; no one goes to school to study “Basic Skills” or conduct remedial coursework.

Taking non-transferable prerequisites is perceived as a waste of time and money; this could delay our completions of transfer or of a certificate or degree program.

Our colleges’ supply of such courses hasn’t met student need and demand. Mandatory placement is going to prove difficult not only to us, but to instructors and our colleges, should availability of these classes not change.

Student Questions and Recommendations

- What’s “Assessment and Placement” and what does it mean to me?
Not only do we need to learn this at orientation or matriculation, but our classes must also be made relevant to our majors or the skills we seek to acquire.
- So I’ve taken the Assessment Test, what do my scores mean?
We need deliberate counseling on moving from assessment to placement, which means an **integration** of student services and instruction.
- Where are the classes?
We recommend that should mandatory placement be enacted, colleges are granted sufficient funds to make available these courses we need.
- Will these additional units hurt me when I apply for EOPS?
In implementation, we think it’s crucial to exclude basic skills coursework from eligibility for EOPS and other aid programs.



What Now?

As we continue to get input and determine what changes are necessary to address assessment, placement, prerequisites and student success - we need to be vigilant:

- ✓ Look at the data, but realize the data is not the entire story.
- ✓ Do reality checks on our expectations for students and the guidance we give them.
- ✓ Maintain integrity in our curriculum.

While basic skills development is not considered exciting or a goal any student chooses, this

chapter ends with a personal testimony from Cristela Ruiz-Solorio, student representative on the Academic Senate Curriculum Committee, Rio Hondo College Student and Student Senate Representative:

“Ask any number of students about their opinion on prerequisites, and you will get a number of different responses. I come from a background of prerequisites; I happen to have assessed in a very basic mathematics class and had to work my way up. From elementary mathematics, to taking an honors statistics class, and finally, currently taking finite mathematics. It was difficult to deal with the fact that I had to take mathematics that dealt with simple addition, subtraction and multiplication when in high school. I was in geometry but nonetheless, I knew I was there because I had not tested to where I needed to be in order to qualify for the higher mathematics courses. Assessing into those courses helped me acquire the basics I missed the first time around and it helped me along my journey in my later classes. I will not argue, it did take longer than one would hope and sometimes I felt like I was not being challenged but that was just for a few chapters. This was not the feeling for the whole class. Looking back at my college career, I saw a huge improvement. I had progressed so much. It never crossed my mind that I would have the capability to take an honors mathematics course. I owe a huge part of my successes to taking the prerequisites because it provided me with the tools I needed to succeed. Constantly stressing over simple mathematics homework or upcoming tests is a thing of the past. Another unforeseen positive consequence was that I was able to focus on my other courses. Taking the prerequisites gave me confidence not only inside the classroom but outside as well. I am amazed to see where I began and where I currently stand; it really gives me something to be proud of myself.”

Chapter 16



Scaffolding and Foundational Support for College Success: The Role of Prerequisites

Appendix 1 – Sample Data Examining Student Success and Prerequisite Validation

Appendix 2 – Title 5 Codes relevant to Prerequisites

Appendix 3 – Title 5 Levels of Scrutiny for Prerequisites

Appendix 4 - Excerpts from *Good Practice for the Implementation of Prerequisites (1997)* elaborating on the requirements for prerequisite validation.

Appendix 5 – Academic Senate Resolutions Regarding Prerequisites

Appendix 6 - Resources for Chapter 16

Appendix 1

Sample Data Examining Prerequisite Validation

Sample 1: DeAnza Econ 1 course Fall 2008

De Anza College Success in ECON1 Fall 2008 Based on Math Background

Draft

	Pass		Did Not Pass		Withdrew		Total	
	Grades	Percent	Grades	Percent	Grades	Percent	Grades	Percent
<u>Math Course Completed (C or Higher)</u>								
MATH114 or higher	273	81%	24	7%	42	12%	339	100%
MATH212/212	26	47%	13	24%	16	29%	55	100%
MATH210	4	22%	5	28%	9	50%	18	100%
<u>Math Placement Only</u>								
MATH114 or Higher	64	61%	14	13%	27	26%	105	100%
MATH112/212	16	41%	11	28%	12	31%	39	100%
MATH210	0	0%	5	56%	4	44%	9	100%
<u>No Placement or Math Course Completed</u>								
	116	56%	45	22%	45	22%	206	100%
Total	499	65%	117	15%	155	20%	771	100%

21-Jan-09

Andrew LaManque, Ph.D.

Key:

Math 114 = Intermediate Algebra

Math 112/212 = Elementary Algebra (course # changed when recoded)

Math 210 = pre-algebra (De Anza's lowest level)

Sample 2: Bakersfield College Data on College Level Reading and Success in Psych

Bakersfield College

Psychology B1A Prerequisite Study

Psych B1A Students from Fall 2001 to Summer 2003

Reading Prerequisite Analysis

	Met the PreReq *			
		Yes (1)	No (0)	
Psych B1A Course Success - Yes (1)	1091	75.2%	547	51.0%
Psych B1A Course Success - No (0)	360	24.8%	525	49.0%
Total	1451	100.0%	1072	100.0%
Grand Total All	2523			

* To Meet the Prerequisite, a student must have:

- 1) Tested at Reading Level 5 or above, and/or
- 2) Completed Coursework - Reading 50 (ACDVB50) with a C or Better

Success is equal to a grade of C or better

Sample 3: Bakersfield College Data on College Level Reading and Success in Sociology

Bakersfield College
SOCIOLOGY B1 Prerequisite Study
 SOCI B1 Students from Fall 2001 to Summer 2003
 Reading Prerequisite Analysis

	Met the PreReq *			
	Yes (1)		No (0)	
SOCI B1 Course Success - Yes (1)	421	63.2%	216	43.1%
SOCI B1 Course Success - No (0)	245	36.8%	285	56.9%
Total	666	100.0%	501	100.0%
Grand Total All	1167			

* To Meet the Prerequisite, a student must have:

- 1) Tested at Reading Level 5 or above, and/or
 - 2) Completed Coursework - Reading 50 (ACDVB50) with a C or Better
- Success is equal to a grade of C or better

Appendix 2

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS
TITLE 5. EDUCATION
DIVISION 6. CALIFORNIA COMMUNITY COLLEGES
CHAPTER 6. CURRICULUM AND INSTRUCTION
SUBCHAPTER 1. PROGRAMS, COURSES AND CLASSES
ARTICLE 1. PROGRAM, COURSE AND CLASS CLASSIFICATION AND STANDARDS

This database is current through 5/22/09, Register 2009, No. 21

§ 55003. Policies for Prerequisites, Corequisites and Advisories on Recommended Preparation.

(a) The governing board of a community college district may establish prerequisites, corequisites, and advisories on recommended preparation, but must do so in accordance with the provisions of this article. Nothing in this subchapter shall be construed to require a district to establish prerequisites, corequisites, or advisories on recommended preparation; provided however, that a prerequisite or corequisite shall be required if the course is to be offered for associate degree credit and the curriculum committee finds that the prerequisite or corequisite is necessary pursuant to sections 55002(a)(2)(D) or 55002(a)(2)(E).

(b) A governing board choosing to establish prerequisites, corequisites, or advisories on recommended preparation shall, in accordance with the provisions of sections 53200-53204, adopt policies for the following:

(1) The process for establishing prerequisites, corequisites, and advisories on recommended preparation. Such policies shall provide that in order to establish a prerequisite or corequisite, the prerequisite or corequisite must be determined to be necessary and appropriate for achieving the purpose for which it is being established. District policies shall also specify the level of scrutiny that shall be required in order to establish different types of prerequisites, corequisites, and advisories on recommended preparation. At a minimum, prerequisites, corequisites, and advisories on recommended preparation shall be based on content review, with additional methods of scrutiny being applied depending on the type of prerequisite or corequisite being established. The policy shall provide that the types of prerequisites described in subdivision (e) may be established only on the basis of data collected using sound research practices.

Determinations about prerequisites and corequisites shall be made on a course-by-course or program-by-program basis.

(2) Procedures to assure that courses for which prerequisites or corequisites are established will be taught in accordance with the course outline of record, particularly those aspects of the course outline that are the basis for justifying the establishment of the prerequisite or corequisite.

(3) The process, including levels of scrutiny, for reviewing prerequisites and corequisites to assure that they remain necessary and appropriate. These processes shall provide that at least once each six years all prerequisites and corequisites established by the district shall be reviewed, except that prerequisites and corequisites for vocational courses or programs shall be reviewed every two years. These processes shall also provide for the periodic review of advisories on recommended preparation.

(4) The bases and process for an individual student to challenge the application of a prerequisite or corequisite.

(c) Prerequisites or corequisites may be established only for any of the following purposes:

(1) the prerequisite or corequisite is expressly required or expressly authorized by statute or regulation; or

(2) the prerequisite will assure, consistent with section 55002, that a student has the skills, concepts, and/or information that is presupposed in terms of the course or program for which it is being established, such that a student who has not met the prerequisite is highly unlikely to receive a satisfactory grade in the course (or at least one course within the program) for which the prerequisite is being established; or

(3) the corequisite course will assure, consistent with section 55002, that a student acquires the necessary skills, concepts, and/or information, such that a student who has not enrolled in the corequisite is highly unlikely to receive a satisfactory grade in the course or program for which the corequisite is being established; or

(4) the prerequisite or corequisite is necessary to protect the health or safety of a student or the health or safety of others.

(d) Except as provided in this subdivision, no prerequisite or corequisite may be established or renewed pursuant to subdivision (b)(3) unless it is determined to be necessary and appropriate to achieve the purpose for which it has been established. A prerequisite or corequisite need not be so scrutinized until it is reviewed pursuant to subdivision (b) (3) if:

(1) it is required by statute or regulation; or

(2) it is part of a closely-related lecture-laboratory course pairing within a discipline; or

(3) it is required by four-year institutions.

(e) A course in communication or computation skills may be established as a prerequisite or corequisite for any course other than another course in communication or computation skills only if, in addition to conducting a content review, the district gathers data according to sound research practices and shows that a student is highly unlikely to succeed in the course unless the student has met the proposed prerequisite or corequisite. If the curriculum committee initially determines, pursuant to section 55002(a)(2)(E), that a new course needs to have a communication or computation skill prerequisite or corequisite, then, despite subdivision (d) of this section, the prerequisite or corequisite may be established for a single period of not more than two years while the research is being conducted and the final determination is being made, provided that all other requirements for establishing the prerequisite or corequisite have been met. The requirements of this subdivision related to collection of data shall not apply when:

(1) baccalaureate institutions will not grant credit for a course unless it has the particular communication or computation skill prerequisite; or

(2) the prerequisite or corequisite is required for enrollment in a program, that program is subject to approval by a state agency other than the Chancellor's Office and both of the following conditions are satisfied:

(A) colleges in at least six different districts have previously satisfied the data collection requirements of this subdivision with respect to the same prerequisite or corequisite for the same program; and

(B) the district establishing the prerequisite or corequisite conducts an evaluation to determine whether the prerequisite or corequisite has a disproportionate impact on particular groups of students described in terms of race, ethnicity, gender, age or disability, as defined by the Chancellor. When there is a disproportionate impact on any such group of students, the district shall, in consultation with the Chancellor, develop and implement a plan setting forth the steps the district will take to correct the disproportionate impact.

(f) Prerequisites, corequisites, and advisories on recommended preparation must be identified in college publications available to students as well as the course outline of any course for which they are established.

(g) Prerequisites establishing communication or computational skill requirements may not be established across the entire curriculum unless established on a course-by-course basis.

(h) The determination of whether a student meets a prerequisite shall be based on successful completion of an appropriate course or on an assessment using multiple measures. Any assessment instrument shall be selected and used in accordance with the provisions of subchapter 6 (commencing with Section 55500) of this chapter.

(i) If a prerequisite requires precollegiate skills in reading, written expression, or mathematics, the governing board of a district shall ensure that nondegree-applicable basic skills courses designed to teach the required skills are offered with reasonable frequency and that the number of sections available is reasonable given the number of students who are required to meet the associated skills prerequisites and who diligently seek enrollment in the prerequisite course.

(j) Whenever a corequisite course is established, sufficient sections shall be offered to reasonably accommodate all students who are required to take the corequisite. A corequisite shall be waived as to any student for whom space in the corequisite course is not available.

(k) No exit test may be required to satisfy a prerequisite or corequisite unless it is incorporated into the grading for the prerequisite or corequisite course.

(l) The determination of whether a student meets a prerequisite shall be made prior to his or her enrollment in the course requiring the prerequisite, provided, however, that enrollment may be permitted pending verification that the student has met the prerequisite or corequisite. If the verification shows that the student has failed to meet the prerequisite, the student may be involuntarily dropped from the course if the applicable enrollment fees are promptly refunded.

Otherwise a student may only be involuntarily removed from a course due to excessive absences or as a result of disciplinary action taken pursuant to law or to the student code of conduct.

(m) Any prerequisite or corequisite may be challenged by a student on one or more of the grounds listed below. The student shall bear the initial burden of showing that grounds exist for the

challenge. Challenges shall be resolved in a timely manner and, if the challenge is upheld, the student shall be permitted to enroll in the course or program in question. Grounds for challenge are:

- (1) The prerequisite or corequisite has not been established in accordance with the district's process for establishing prerequisites and corequisites;
- (2) The prerequisite or corequisite is in violation of this section;
- (3) The prerequisite or corequisite is either unlawfully discriminatory or is being applied in an unlawfully discriminatory manner;
- (4) The student has the knowledge or ability to succeed in the course or program despite not meeting the prerequisite or corequisite;
- (5) The student will be subject to undue delay in attaining the goal of his or her educational plan because the prerequisite or corequisite course has not been made reasonably available; or
- (6) Such other grounds for challenge as may be established by the district governing board.

(n) In the case of a challenge under subdivision (m)(3) of this section, the district shall promptly advise the student that he or she may file a formal complaint of unlawful discrimination pursuant to subchapter 5 (commencing with section 59300) of chapter 10 of this division. If the student elects to proceed with the challenge, completion of the challenge procedure shall be deemed to constitute an informal complaint pursuant to section 59327.

(o) District policies adopted pursuant to this section shall be submitted to the Chancellor as part of the district's matriculation plan pursuant to section 55510.

Note: Authority cited: Section 70901, Education Code. Reference: Section 70901, Education Code.

Appendix 3 Summary of Levels of Scrutiny

Type of Prerequisite or Corequisite	Levels of Scrutiny Required to Apply Prerequisites	Title reference	Example
1. Advisories	Content review validates the content of the required course provides necessary skills and/or knowledge alone. <i>No requirement to prove student is unlikely to succeed.</i>	§ 55003(b)(1)	Developmental Writing course advised for Latino/a Literature course
2. Course within the same discipline	Content review validates the content of the required course provides necessary skills and/or knowledge <i>such that not meeting the requirement makes a student unlikely to succeed.</i> *see content review notes below	§55003(c)(2)	Requiring the first semester of a physics, calculus, biology, etc prior to the second semester course in a series. <i>Note: the requirement is based on likelihood to fail not to succeed.</i>
3. Course outside of discipline closely related but not English or math	Content review validates that skills, concepts, or information in one course are necessary for success in a subsequent target course.	§55003(c)(2)	Introduction to Physics as a prerequisite for Introduction to Engineering required by CSU
4. Health or safety	Review of safety needs for the student or others	§55003(c)(4)	Negative TB test and proof of immunization for Child Development course
5. Required by statute or regulation	No level of scrutiny required (may require disproportionate impact study) Determined by local board as applicable	§55003(d)(1) §55003(e)(2)	Paramedic licensure or certification necessary for Continuing Education courses in Paramedic Program
6. Closely related lecture-laboratory pairing within a discipline	No level of scrutiny required	§55003(d)(2)	Chemistry laboratory associated with Chemistry lecture or a Ceramics lab required to support a ceramics lecture
7. Required by a four year transfer institution	No level of scrutiny but documentation of transfer institutions requiring this prerequisite removes the need to validate with statistics	§55003(d)(3) §55003(e)(1)	Intermediate Algebra required by a CSU for Biology majors course
8. Computational or writing course in a discipline outside of communication or computation	<ul style="list-style-type: none"> • Content review validates that skills of English or math course are necessary for success in subject area course • Scrutiny includes data collection and analysis showing <i>the student is highly unlikely to succeed.</i> • A disproportionate impact study is conducted. 	§55003(e) §55003(g) §55003(h)	Basic Reading course required for an Introduction to Sociology course

	<ul style="list-style-type: none"> Established on a course by course basis not across an entire curriculum Multiple measures established to meet requirement 		
9. Placement based on skills assessment	<ul style="list-style-type: none"> Content review validating skills in course and those tested in assessment Use of a CCCCO approved assessment instrument Validated cut-off scores for the assessment placement Incorporation of multiple measures A disproportionate impact study is conducted. 	<p>§55003(e)(2)(B) §55003(b)</p>	<p>Placement in to English or mathematics courses based on assessment testing.</p> <p>College level reading skills (or a comparable course) as a prerequisite to a biology course or any general education course.</p>
10. Program prerequisites	<ul style="list-style-type: none"> Content review by at least 6 districts with the same program A disproportionate impact study is conducted. 	<p>§ 55003(e)(2) (A) & (B)</p>	<p>Transfer-level English as a prerequisite for admission to Dental Hygiene Program</p>
11. Other Prerequisites (GPA, recency of course taken)	<ul style="list-style-type: none"> Content review by at least 6 districts with the same program A disproportionate impact study is conducted. 	<p>§ 55003(e)(2)(A) & (B)</p>	<p>2.5 GPA as a prerequisite to the Respiratory Therapy Program</p>

Other Limitations on Enrollment

12. Performance courses	<ul style="list-style-type: none"> Other courses can meet degree/certificate requirements 	<p>§58106(b)(3)</p>	<p>Audition for Dance Production course</p>
13. Honors courses	<ul style="list-style-type: none"> Board adopts fair and equitable procedures allocating available seats to those students judged most qualified Other sections/courses can meet degree/certificate requirements 	<p>§58106(b)(3)</p>	<p>Honors Psychology is offered along with general Psychology</p>
14. Blocks of courses or sections (cohort programs)	<ul style="list-style-type: none"> a reasonable percentage of all sections of the course do not have such restrictions 	<p>§58106(b)(4)</p>	<p>Puente, Learning Communities</p>

§ 55000. Definitions (c) "Content review" means a rigorous, systematic process developed in accordance with sections 53200 to 53204, approved by the Chancellor as part of the district matriculation plan required under section 55510, and that is conducted by faculty to identify the necessary and appropriate body of knowledge or skills students need to possess prior to enrolling in a course, or which students need to acquire through simultaneous enrollment in a corequisite course.

Content Review (per the *Model District Policy for Applying Prerequisites* 1993, page 5) to establish prerequisites or corequisites: An official process where faculty experts review course syllabi, content, course outline of record, tests, related instructional materials, course format, type and number of examinations, grading criteria, objectives, exit competencies and student learning outcomes of a proposed course, in order to determine and justify whether successful students will attain required knowledge or skills necessary for the target prerequisite or corequisite course. Thorough documentation of this process must be maintained.

Note: All restrictions to enrollment must be clear in college publications §55003(f), require multiple measures §55003(b) and a process for students challenging the requirements §55003(m).

This handout is an updated summary of the levels of scrutiny produced from multiple previous handouts and Title 5 updates by Tess Hansen (Foothill College) and Janet Fulk's (Bakersfield College) from the 2008-2009 Academic Senate Curriculum Committee.

Appendix 4

Excerpts from *Good Practice for the Implementation of Prerequisites (ASCCC, 1997)* elaborating on the requirements for prerequisite validation pages 2-5.

Levels of Scrutiny for Prerequisites

The method to establish a prerequisite, called the *level of scrutiny*, varies with the type of course: 1) prerequisites for transferrable courses can be established by a basic content review plus identification of similar prerequisites used at three UC or CSU campuses; 2) courses within or across sequences, especially vocational courses which have no UC or CSU equivalents, can have prerequisites by going through a documented content review; and 3) out-of-sequence communication and computation skills (and non-course prerequisites) require data collection and analysis in addition to content review.

Many transferrable courses have standard prerequisites that are well recognized in the discipline. The analysis begins with *basic content review* as described under advisories but with a higher level of rigor: identifying skills without which the student is highly unlikely to succeed. Agreement of the discipline faculty on these skills, either by consensus or vote, is important. In some cases it may help to have each faculty member rank the skills, for example on a scale such as 1-to-5, for the degree of impact on student success. A mean score above certain level, e.g. 4, might be recommended before advancing the skill for the prerequisite. The appropriate course which teaches these skills is then proposed. If a similar course is used as a prerequisite at *three or more UC or CSU campuses*, the prerequisite is justified [Model District Policy II.A.1.a.].

Documentation presented to the curriculum committee might consist of 1) a summary of the process and rationale, and 2) copies of the catalog descriptions of the target and prerequisite courses at three UC or CSU campuses--perhaps with a narrative if the comparability of the courses is not obvious, and 3) a list of the prerequisite skills in the course outline. The curriculum committee approves the course and the prerequisite by separate action, applying the criteria that 1) the content review process has been followed, 2) the UC/CSU and proposed college courses are comparable, and 3) the course outline is complete, well integrated, coherent and meets Title 5 standards.

The second level of scrutiny is *documented content review* [Model District Policy II.A.1.b.]. This analysis is sufficient to establish prerequisites within a sequence or across a sequence, such as prerequisites for a vocational courses which have no UC/CSU equivalents. Excluded are communication or computational skills--which require data collection and analysis. The term "in a sequence" does not imply that the courses are numbered or lettered sequentially--or even that the courses are in the same discipline. If the course content of A is structured to lead into course B and students normally take B after A, clearly the courses are sequential. Examples include so-called "service courses" such as "Chemistry 70, Pharmaceutical Chemistry" (in the chemistry discipline) as a prerequisite for "Pharmacy 101: The Chemical Basis of Pharmacology" (in the pharmacy technology discipline).

The fundamental difference between a basic content review and a documented content review is the need to present evidence that the identified prerequisite skills are covered in the proposed prerequisite course.

Again, the curriculum committee approves the course outline and the prerequisite by separate action. In evaluating the proposed prerequisite, the committee is generally checking that 1) the content review process was followed, 2) the proposed prerequisite course does indeed teach the needed skills (and that both the target and prerequisite course outlines demonstrate this--perhaps using a grid analysis such as that shown below), and 3) the course outline is complete, well integrated, coherent and meets Title 5 standards.

Target Course Prerequisite Skills

Prerequisite Course Student Outcomes	1	2	3
1		X	
2	X		
3			X

The analysis of the exit skills in the prerequisite course and the entry skills needed for the target course often leads to curriculum change.

- Courses in a sequence may not have a smooth flow of topics. Some shifting of content between courses may help.
- Discussions among instructors of the two courses may lead to the discovery of topics or teaching methods which make the prerequisite skills more effective for the target course. For example, science faculty need students to graph scattered experimental data but graphing may be taught in the prerequisite math class using points that fall neatly on a line.
- It may be that not all of the prerequisite skills are taught in the proposed prerequisite course. Options to deal with this include 1) teaching the prerequisite skill within the target course itself, 2) adding the topic to the content of the proposed prerequisite course, and 3) shifting the needed topic from another course into the proposed course. For example, 9 of the 10 skills needed for C may be taught in B but 1 may be taught in A. By moving that topic to B, the prerequisite to C could be B alone rather than both A and B.

The curriculum committee should be sure that any gaps in prerequisites are covered. If not all the needed skills are taught in the prerequisite course, how are students to learn them?

The highest level of scrutiny is ***data collection and analysis***. This analysis is applied to out-of-sequence communication and computation skills and non-course prerequisites. Examples are “English 1A: Freshman Composition” as a prerequisite to “History 17A: Early United States History,” “Math 1A: Calculus” as a prerequisite to “Physics 4A: General Physics” and “Computer Science 20: Basic Programming within the last three years” as a prerequisite to “Computer Science 25: Intermediate Programming.” (The latter is called a *recency* prerequisite, establishing how recently the prerequisite course has been taken.)

The basic premise is that the college must demonstrate, using sound research practices, that students are highly unlikely to succeed without these skills. The Model District Policy, II.A.1.g.(3), states, “The research design, operational definition, and numerical standards, if appropriate, shall be developed by research personnel, discipline faculty, and representatives of the Academic Senate.” The college should establish a

procedure for developing such research designs. This procedure should be approved by the curriculum committee and the academic senate and should appear in the college's curriculum handbook.

The Model District Policy II.A.1.g. lists three options for student success: 1) grades, either mid-term or final; 2) the instructor's evaluation of the student's readiness for the course, and 3) the student's own self-evaluation of his or her readiness. (A fourth option, assessment, can be used as a measure and will be covered in the next section.)

When using grades, success is a "satisfactory grade" of A, B, C, or CR [Title 5 §55200(d)]. Final grades are certainly a well-recognized measure of student success, but mid-term grades may be a better yardstick for readiness--given that students who drop a course late in the term rarely do so because of a lack of prerequisite skills. When doing a grade analysis, classifying 'W' withdrawals (drops after the add/drop date) and 'NG' no grades (drops before the add/drop date) is quite advantageous. Some W's and NG's result from lack of student readiness, but others are attributable to job changes, family responsibilities, and so on. Should a W or NG be counted as non-success or left out of the study entirely? One approach is to ask instructors to make the determination. Did the drop occur for non-academic reasons, job changes, family situations and so on? If so, leave the W or NG out of the sample. If not, include the student in the sample. As you will see, sample size, particularly that of the "non-success" population, is critical in producing a meaningful statistical result.

Besides grades, success may be ascertained by an evaluation of readiness by the instructor or student. Typically, instructors and/or students are surveyed for this information. A good practice is to use a scale such as 1-to-5 or 1-to-10 from "very prepared" to "not prepared at all." The five or ten point spread produces a more meaningful correlation with whether or not the student had the prerequisite. The survey may be more effective when administered about one-third of the way into the course. This gives enough time for students to attempt course material but is not so late in the term that the survey just duplicates the final grade results.

Standard research methods to evaluate the relationship between having the prerequisite and success in the course include:

- 1) a **correlation coefficient** such as the Pearson r (useful for continuous data such as grade-to-grade correlations, often corrected for factors such as restriction of range),
- 2) a matrix or four-cell table and accompanying **chi-square** (for discrete categories of data such as the "yes/no" answer to "does the student meet the prerequisite?," and
- 3) a matrix or four-cell analysis showing **net increase in accuracy**, a comparison of the percentage of the students who succeed in the course before and after imposing the prerequisite. (Applying the prerequisite should show a significant gain in the percentage of students succeeding.)

The details of these methods can be gleaned from standard statistics texts, and, in particular, Method #23 in *Matriculation Evaluation: Phase III Local Research Options (CCCCO, June 1992)* and Appendix A in *Assessment Validation Project Local Research Options (CCCCO, February 1991)*.

Appendix 5

Selected ASCCC Resolutions on Prerequisites

9.02 S09 Communication and Computation Prerequisite Validation through Content Review

Whereas, Underprepared students are not able to read, write, or complete quantitative analysis necessary for transfer or collegiate level courses, yet are enrolled in these courses due to the absence of prerequisites and lack of mandated placement;

Whereas, *Basic Skills as a Foundation for Student Success in California Community Colleges* (2007) summarizes the research confirming that alignment of entry/exit skills and careful organization of instruction is essential to student success;

Whereas, Under current Title 5 Regulation, faculty who wish to correct this situation are unable to apply prerequisites of mathematics, English, or reading to non-sequential courses across disciplines without requiring local college-by-college, course-by-course statistical validation of prerequisites documenting student failure for courses outside of a discipline, and these requirements are perceived as onerous, resulting in a lack of prerequisites for the vast majority of general education courses; and

Whereas, Course content review is used to ensure academic integrity and delineate necessary entry skills to promote student success by matching the exit skills of the prerequisite course with the skills and concepts needed in the targeted course;

Resolved, That the Academic Senate for California Community Colleges recommend changes needed to Title 5 language on prerequisites that, instead of relying on statistical analysis, allow local faculty to base their determination for prerequisites of English, reading, or mathematics for collegiate level courses on content review;

Resolved, That the Academic Senate for California Community Colleges remind local senates to ensure that a prerequisite challenge process must be available to students; and

Resolved, That the Academic Senate for California Community Colleges recommend that once new prerequisites are implemented, colleges conduct research on the effect(s) of the prerequisites.

9.03 S09 Pilot Project for Basic Skills Prerequisite Applications to General Education Courses

Whereas, The Basic Skills Initiative has raised awareness about the large number of underprepared students in the California Community College System, where 70-98% of first-time entering students assess as having basic skills needs;

Whereas, Student success data indicate that students who are not college ready are less likely to succeed than students already at college level; and

Whereas, Title 5 Regulations demand local college-by-college, course-by-course statistical validation of prerequisites documenting student failure for courses outside of a discipline, and these requirements are perceived as onerous, resulting in a lack of prerequisites for the vast majority of general education courses;

Resolved, That the Academic Senate for California Community Colleges research potential pilot projects, easily replicable at all colleges, for applying basic skills prerequisites to general education courses.

9.05 S06 Examine Processes for Establishing Prerequisites

Whereas, Curriculum, including establishing prerequisites, is an academic and professional matter and Title 5 §53200 establishes that faculty, through the academic senate, have the primary function of making recommendations with respect to such matters;

Whereas, The process of statistical validation of pre- and co-requisites has presented tremendous challenges, including circumstances in which faculty are unable to implement academically valid pre- and co-requisites;

Whereas, Complete and accurate student data for the purposes of statistical validation are difficult to obtain and require students to not succeed, contrary to our goal as faculty who seek to facilitate student learning regardless of student lack of preparation; and

Whereas, Non-validated pre- and co-requisites are routinely implemented at the request of outside agencies, "regardless of the ability to validate such requirements," in violation of current policy;

Resolved, That the Academic Senate for California Community Colleges work with the System Office to review all policies, procedures, laws, and legislation related to pre-requisites, co-requisites, and advisories, including the current validation process;

Resolved, That the Academic Senate for California Community Colleges prepare recommendations for modifying the current validation process; and

Resolved, That the Academic Senate for California Community Colleges review all recommendations, including possible changes to Title 5, at the Spring 2007 Plenary Session and, if appropriate, seek to implement desired changes.

9.09 F07 Models for Content Review

Whereas some current research that seems to show that English and math prerequisites are predictors of student success in general education courses is, in fact, flawed research because of the flawed research design, and

Whereas the Academic Senate for California Community Colleges should only support indicators of student success that are valid and reliable,

Resolved that the Academic Senate support funding for longitudinal research designs relating to the use of math and writing skills to predict student success in other general education courses.

9.05 S96 Prerequisite Models

Whereas validation of program prerequisites has created hardships for many colleges and their students, and

Whereas based on valid research, individual colleges have developed profiles of successful students in their Allied Health programs, and

Whereas every community college cannot complete the extensive research necessary to validate programs and prerequisites,

Resolved that the Academic Senate for California Community Colleges work in conjunction with the Chancellor's Office in order to facilitate the Chancellor's Office approval process of program prerequisites by using the following procedures: 1) The Senate Curriculum Committee requests examples of successful program prerequisite validation models. 2) The Curriculum Committee reviews and recommends appropriate models that could be used to validate similar program prerequisites at other community colleges. 3) The Academic Senate works with the Chancellor's Office to develop a process whereby colleges could utilize these models in place of their own research in order to validate their own program prerequisites, and

Resolved that the Academic Senate for California Community Colleges because of the urgency of this issue, direct the Executive Committee to take immediate action to resolve this issue.

11.01.01 F92 Amendment to Establishing Prerequisites

Whereas the Chancellor's Office interprets current regulations to permit content validation as well as statistical validation for mandatory prerequisites (as verified in the memo from Vice Chancellors Rita Cepeda and Thelma Scott Skillman of 8/21/92 to Matriculation Coordinators and Academic Senate Presidents) (Document Available in the Senate Office), and

Whereas content review respects the expertise, experience, and professional judgement of faculty in any field, and

Whereas content review has been proven effective over many centuries and is the preferred method of determining prerequisites in all segments of higher education, and

Whereas other forms of research, including statistical validation, provide no greater assurances of fairness to students, and

Whereas adequate safeguards against arbitrariness exist in the departmental review and curriculum review processes; and the rights of students are protected by challenge procedures for special cases;

Resolved that the Academic Senate for California Community Colleges' draft proposal for revision of Title 5 regulations dated 10/2/92 Section 2(d)(7) and 2(d)(8) be amended to read as follows: for any prerequisites not covered in other sections of (d) above, a systematic model of content review, approved by the chancellor's office, shall be an acceptable means of reviewing and evaluating prerequisites. Other types of research designs approved by the chancellor's office shall be acceptable also, and may be used at the discretion of the college or district.

Resolved that language in the rest of the document be consistent with these changes: (2(d)(1)C, 2(d)(2)F, 2(d)(3)D, and 2(d)(1)D[5]).

Appendix 6

Resources for Chapter 16

- Academic Senate for California Community Colleges (ASCCC). (1992). *Establishing prerequisites*. Retrieved June 10, 2009, from http://www.asccc.org/Publications/Papers/Establishing_prerequisites.html.
- Academic Senate for California Community Colleges (ASCCC). (1997). *Good practice for the implementation of prerequisites*. Retrieved June 10, 2009, from http://www.asccc.org/Publications/Papers/good_practice_prerequis.html.
- Academic Senate for California Community Colleges (ASCCC). (2004). *Issues in basic skills assessment and placement in the California community colleges*. Retrieved June 10, 2009, from <http://www.asccc.org/Publications/Papers/BasicSkillsIssuesAssessment2004.html>.
- Board of Governors for California Community Colleges. (1993). *The model district policy on prerequisites, corequisites, and advisories on recommended preparation*. Retrieved June 10, 2009, from http://www.asccc.org/Publications/Papers/Model_prerequisites.html.
- California Education Code Retrieved June 23, 2009, from <http://www.leginfo.ca.gov/cgi-bin/waisgate?WAISdocID=78344120263+0+0+0&WAIAction=retrieve>.
- California Community College Chancellor's Office (CCCCO). (March 2009). *Focus on results: Accountability reporting for the California community colleges*. Retrieved June 11, 2009, from http://www.cccco.edu/Portals/4/TRIS/research/ARCC/arcc_2009_final.pdf
- Community College Survey of Student Success (CCSSE). (2007). *Starting right: A first look at engaging entering students*. The University of Texas at Austin. Community College Leadership Program, Community College Survey of Student Engagement, Austin: TX . Retrieved November 30, 2008 at http://www.ccsse.org/sense/SENSE_report07-FINAL.pdf.
- Hayward, Craig. (2009) Survey on 23 Colleges Basic Skills Placement for Fall 2008. This will be posted on the Cabrillo Research Web Page under "Studies and Reports" from http://pro.cabrillo.edu/pro/pro_reports/. (Note: the initial data available included 21 colleges but may include more for the final report.)