

# *Saddleback College*

## Matriculation Research and Evaluation Component Standard 4

**Matriculation's Impact on Particular Courses, Programs and Facilities**

**Victor Manchik  
Research Analyst  
Counseling and Special Programs  
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## EXECUTIVE SUMMARY

Matriculation is a comprehensive and integrated process designed to enhance student access to the California Community Colleges; to promote and sustain students' success in their educational endeavors, and help colleges be more effective by matching student's needs with college/district recourses.

Due to its comprehensive nature matriculation process is not easy to define operationally in its entirety and measure its impact when one has to use data that are already available.

This study analyzed degree to which matriculation impacts College Algebra students and the Nursing Program graduates in terms of the degree to which they are being exposed to the various components of the matriculation.

Both groups were exposed to the matriculation process in a different way. Only 41.86% of Nursing Program graduates were exposed to the Orientation services, whereas the percentage of College Algebra students who were exposed to the Orientation component of the matriculation was 84.42%. On the other hand the percentage of students exposed to the Follow-up component was 24.42%. For College Algebra students the percentage was only 1.73%.

Out of the 231 students enrolled in College Algebra in fall 2001 55.41% (N=128) had taken Intermediate Algebra, 35.06% (N=81) had taken Beginning Algebra, and 11.69% (N=27) had taken Pre-Algebra prior to enrolling in the College Algebra.

## **Introduction**

The purpose of this report is to “analyze degree of matriculation’s impact on particular courses, programs and facilities.” Before proceeding, we must define “matriculation,” and its “impact” on courses, programs, and facilities. What is matriculation? What is the purpose of matriculation? What relationships exist between matriculation, programs and facilities? What impact is expected out of the matriculation services? Is it really possible to measure the impact of matriculation on courses, programs, and facilities?

### What is Matriculation?

Matriculation is a comprehensive and integrated process designed to enhance student access to the California Community Colleges; to promote and sustain students’ success in their educational endeavors, and help colleges be more effective by matching student’s needs with college/district recourses (2001 Matriculation Program Report: A Report to the Legislature, 2002).

The term “matriculation” does not reflect the full complexity of the matriculation process. According to the Webster’s College Dictionary to matriculate means “to enroll as a student in a college or university.” In reality, the matriculation process consists of eight different components: admissions; orientation; assessment, counseling/advisement; student follow-up; coordination and training; research and evaluation, and prerequisites, co-requisites and advisories on recommended preparation.

### What is the purpose of matriculation?

Since the California community colleges are obligated to serve “adults of all ages who can profit from instruction,” there must be a systematic way of collecting information about the students’ skills, needs, and goals and match those with the college recourses in order to ensure that students reach their educational objectives. This is done through the process of matriculation.

Matriculation brings a student and a college into an agreement. The student agrees to declare a specific educational objective within a reasonable period of enrollment and maintain satisfactory progress toward an educational goal. The college agrees to provide “an admission process; and orientation to college programs, services and procedures; pre-enrollment assessment and counseling; advisement and counseling for course selection; a suitable curriculum or program of courses; continuous follow-up on student progress with referral to support services when needed; and a program of institutional research and evaluation” (Student Matriculation: A Plan for Implementation, 1997).

Thus, the purpose of matriculation is twofold - student success and institutional effectiveness. Matriculation enables student to make informed choices concerning the program and courses to pursue based on the feedback from the assessment of their skills. It also identifies the support services that students need to succeed, and strengthens students' motivation by providing more frequent performance feedback and encouragement.

At the same time, the implementation of matriculation locally is supposed to strengthen partnership among instructional, services and administrative staff. Utilization of student curriculum and services information collected during the matriculation process is supposed to help colleges in systematic planning and efficient use of district/college resourced though improved student retention and better workload planning and delivery of programs and services; and, finally, increasing the participation of students who are underrepresented in specific vocation and transfer programs (*An Updated Plan for Implementing Matriculation in the California Community Colleges, (1997)*)

#### What impact is expected of matriculation on courses, programs, and facilities?

Based on the above discussion of the nature, purposes and processes of matriculation, it is expected that matriculation will have a positive impact on student's, access, retention, and success in particular courses and programs and enhance college's ability to plan courses more effectively having the information about students' needs collected in the process of matriculation.

In addition, it is expected that, because of assessment placement and the enforcement of pre-requisites, matriculation will lower the demand for some courses by not allowing the students who tested lower on the assessment tests to register in the class of their choice. The demand for courses will impact facilities.

Finally, implementation of any matriculation program requires staff. The staff needs facilities.

#### Can the impact of matriculation on courses, programs and facilities be measured?

There are number of difficulties associated with measuring the impact of matriculation, not only on courses, programs and facilities, but on students as well - especially when one has to use data that are already available (post-facto or retroactive research design).

In order to measure an effect of anything experimentally, one has to have a control group that is not exposed to the treatment the effect of which is being measured. Since matriculation is implemented in such a way that most of the students who are required to go through the matriculation process actually go through the matriculation process and those students who do not go through the matriculation are different students (have completed an associate degree or higher; provide scores from recently taken skills tests which are comparable to those used by the college; seek to enroll only in courses that are not dependent on skill prerequisites), it is impossible to use the two groups as

experimental and control. This is why it is difficult to measure the impact of matriculation using data that are already available.

Nevertheless, if colleges would randomly assign first time freshmen student to the control and experimental groups before they enroll in college and then make sure that the students in the control group are not exposed to anything that has to do with the matriculation process during their college experience, then, after a few years, one would be able to measure the impact of matriculation on students with some degree of certainty. But controlling exposure of students to matriculation would be extremely difficult, since by definition, when a student enrolls in any class, he/she has already been exposed to the admissions component of the matriculation process.

The same is true when units of measurement are not students but courses, programs and facilities. In order to measure the effect of matriculation on courses, programs and facilities experimentally, one must have some courses, programs and facilities that are not exposes to matriculation. One may have a difficult time finding those.

#### So, what are we doing in this study?

Taking into a consideration all the limitations discussed above, this study defines “degree of matriculation’s impact” on students, courses, programs and facilities as the “degree to which students, courses, programs and facilities are exposes to the process of matriculation.” It is beyond the scope of this study to consider if this exposure results in an outcome consistent with the goals and purposes of matriculation. This will require a more sophisticated research design.

The study will to will consider the extent to which students in College Algebra (Math 7) and Nursing Program are exposed to the matriculation process by asking the following questions:

#### Math 7 – College Algebra

1. How many students who enrolled in Math 7 in fall 2001 had gone through the matriculation process?
2. How many of the students were directly placed in the course? How many had to take pre-requisite courses?
3. How many pre-requisite courses exist before matriculation?

#### Nursing Program

1. Of those students who graduated with nursing degree, how many were serviced by matriculation?

#### Student Services Center Building

1. How many staff members are needed to fully implement matriculation? How many of them are located in SSC? What is the total space use?

It must be noted that any course could be selected instead of College Algebra. The same is true of Nursing Program and Math and Sciences Building. For impact of matriculation on student success, please see research evaluation component 6.

### **Method**

This study used Saddleback College MIS data. Course, Enrollment, Assessment, Student Basics, Matriculation and Program Award tables were merged as needed.

### **Findings - College Algebra (Math 7)**

How many students who enrolled in Math 7 in fall 2001 had gone through the matriculation process?

In fall 2001, 231 students enrolled in College Algebra. Of those, 81.82% (N=189) were continuing students, 9.09% (N=21) were first-time students, and 3.03% (N=7) were First-time Transfer Students.

Out of 231, 99.13% (N=229) were listed in the matriculation table. Of those, 84.42% (N=195) received orientation services, 98.70% (N=228) received assessment services, 61.47% (N=142) received Counseling/Advisement services, and 1.73% (N=4) received follow-up services.

**Table 1. Matriculation Services Provided to Students Enrolled in College Algebra.**

<b>Matriculation Services</b>	<b>N</b>	<b>%</b>
Orientation	195	84.42%
Assessment	228	98.70%
Counseling/Advisement	142	61.47%
Follow-up	4	1.73%
Total Serviced by Matriculation	229	99.13%
Fall 2001 College Algebra Enrollees	231	100.00%

How many of the students were directly placed in the course?

Unfortunately, the MIS data do not have information on student assessment test scores and placement. We used class roster data.

According the Math 7 class roster, 184 (79.65% of 231) students were enrolled in Math 7 in fall 2001. The study matched 184 students with the math assessment test records for 04-01-01 to 12-31-01. Out of 184, 34 (18.48%) students had been assessed and placed during that period of time.

**Table 2. Placement Results of in Math 7**

Placement	N	%
No Placements	1	2.94%
Take Lower Test or HS Transcript	5	14.71%
Beginning Algebra	1	2.94%
Intermediate Algebra	5	14.71%
Transfer Level Math	16	47.06%
Math 2 Pre-Calculus	1	2.94%
Math 11 B.C. Calculus	4	11.76%
Math 3A Calculus	1	2.94%
Total	34	100.00%

How many had taken pre-requisite courses?

**Table 3. Number and Percent of Students Who Had Taken Pre-Requisite Courses Sometime Between 1996 – 2001 Prior to Enrolling in College Algebra in fall 2001.**

Pre-Requisite Courses	N	%
MATH 351 - Pre-Algebra	27	11.69%
MATH 251 - Beginning Algebra	81	35.06%
MATH 253 - Intermediate Algebra	128	55.41%
Any of the tree pre-requisites	130	56.28%
Total College Algebra	231	100.00%

Out of 231 students enrolled in College Algebra in fall 2001, 56.28% (N=130) had taken at least one of the tree pre-requisite courses; 55.41% (N=128) had taken Intermediate Algebra, 35.06% (N=81) had taken Beginning Algebra, and 11.69% (N=27) had taken Pre-Algebra prior to enrolling in College Algebra.

**Table 4. Number and Percent of Students Who Had Taken Assessment by Test Type.**

Test Type/Name	N	%
DTLS Critical Reasoning	163	70.56%
DTLS Reading Comprehension	163	70.56%
Nelson-Denny (Form H)	158	68.40%
UC/CSU MDTP Intermediate Algebra (Forms IA450C86 and IA45C91)	72	31.17%
UC/CSU MDTP Elementary Algebra (Form EA50C86)	66	28.57%
UC/CSU MDTP Algebra Readiness (Forms AR50/86 and PC60C86)	47	20.35%
Nelson-Denny Reading Test (Forms G and H)	12	5.19%
Test of Standard Written English	2	0.87%
Combined English Language Skills Assessment (CELSA)	1	0.43%

There was a discrepancy between information provided in the Matriculation and the Assessment tables. According to the matriculation table, of 231 students enrolled in 228

went through some type of assessment services. However, the Assessment table contained records on 175 students only.

### Findings – Nursing R.N. Program

Of those students who graduated with nursing degree, how many were serviced by the matriculation department?

**Table 1. Matriculation Services Provided to Students who graduated with a Nursing Degree in fall 2001.**

Matriculation Services	N	%
Orientation	36	41.86%
Assessment	62	72.09%
Counseling/Advisement	28	32.56%
Follow-up	21	24.42%
Total Serviced by Matriculation	70	81.40%
Fall 2001 Nursing Graduates	86	100.00%

In fall 2001, 86 students graduated with a Nursing R.N. degree (TOP Code 120300). Of those, 81.40% (N=70) had been listed in the matriculation table. Out of 86 graduates, 41.86% had received Orientation Services in their career at Saddleback College, 72.09% (N=62) had gone through assessment, 32.56% (N=28) received Counseling/Advisement services, and 24.42% (N=21) had received Follow-up services.

**Table 2. Number and Percent of Students Who Had Taken Assessment Test Sometimes Before Graduating with Nursing Program.**

Test Type/Name	N	%
DTLS Reading Comprehension	20	23.26%
DTLS Critical Reasoning	20	23.26%
Nelson-Denny (Form H)	19	22.09%
UC/CSU MDTP Algebra Readiness (Forms AR50/86 and PC60C86)	16	18.60%
Nelson-Denny Reading Test (Forms G and H)	13	15.12%
UC/CSU MDTP Elementary Algebra (Form EA50C86)	9	10.47%
UC/CSU MDTP Intermediate Algebra (Forms IA450C86 and IA45C91)	3	3.49%
Test of Standard Written English	3	3.49%
Combined English Language Skills Assessment (CELSA)	1	1.16%

### Summary & Conclusion

Matriculation is a comprehensive college-wide process designed to promote student success and institutional effectiveness. Due to the comprehensive nature and the way matriculation is implemented it is not easy to define it operationally and measure retroactively.

This study analyzed degree to which matriculation impacts College Algebra students and the graduates from the Nursing Program in terms of the degree to which College Algebra Students and Graduates from the Nursing program are being exposed to the component of the matriculation.

Both groups were exposed to the matriculation process in a different way. Only 41.86% of Nursing Program graduates were exposed to the orientation services, while the percentage of College Algebra students was 84.42%. On the other hand the percentage of students exposed to the Follow-up component was 24.42%. For College Algebra students the percentage was only 1.73%.

Out of the 231 students enrolled in College Algebra in fall 2001 55.41% (N=128) had taken Intermediate Algebra, 35.06% (N=81) had taken Beginning Algebra, and 11.69% (N=27) had taken Pre-Algebra prior to enrolling in the College Algebra.