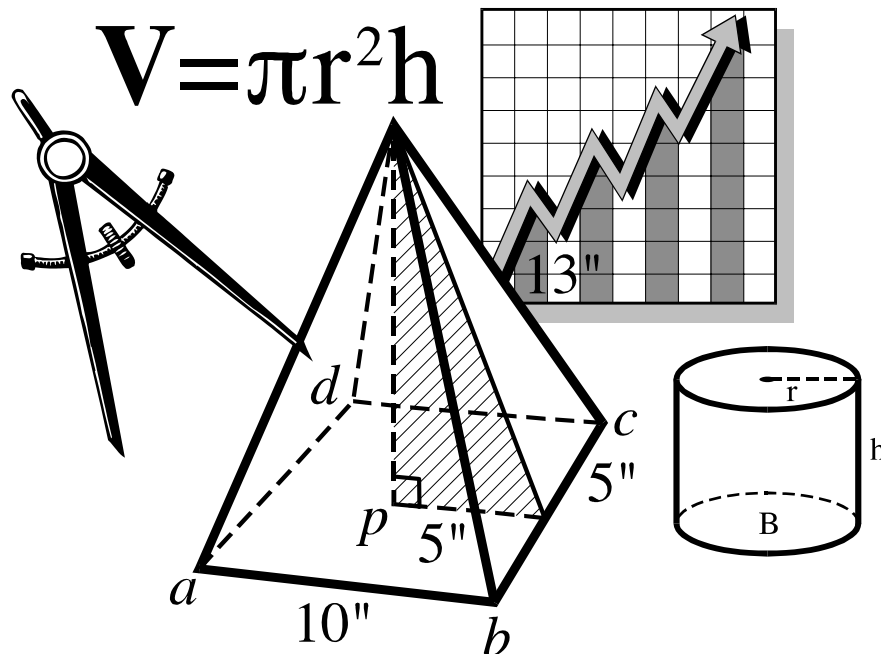


Mathematics Self-Placement Guide

To ensure your success, review this guide prior to attending a PAS (Planning, Assessment, Student Orientation) session.

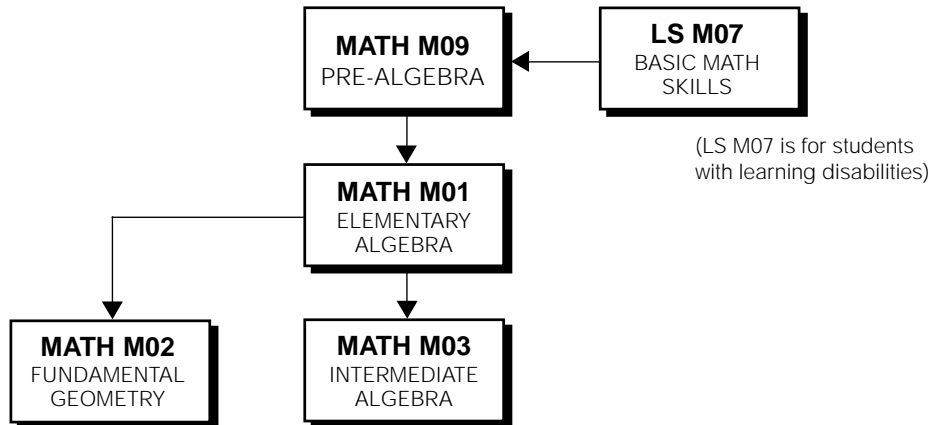


Moorpark College

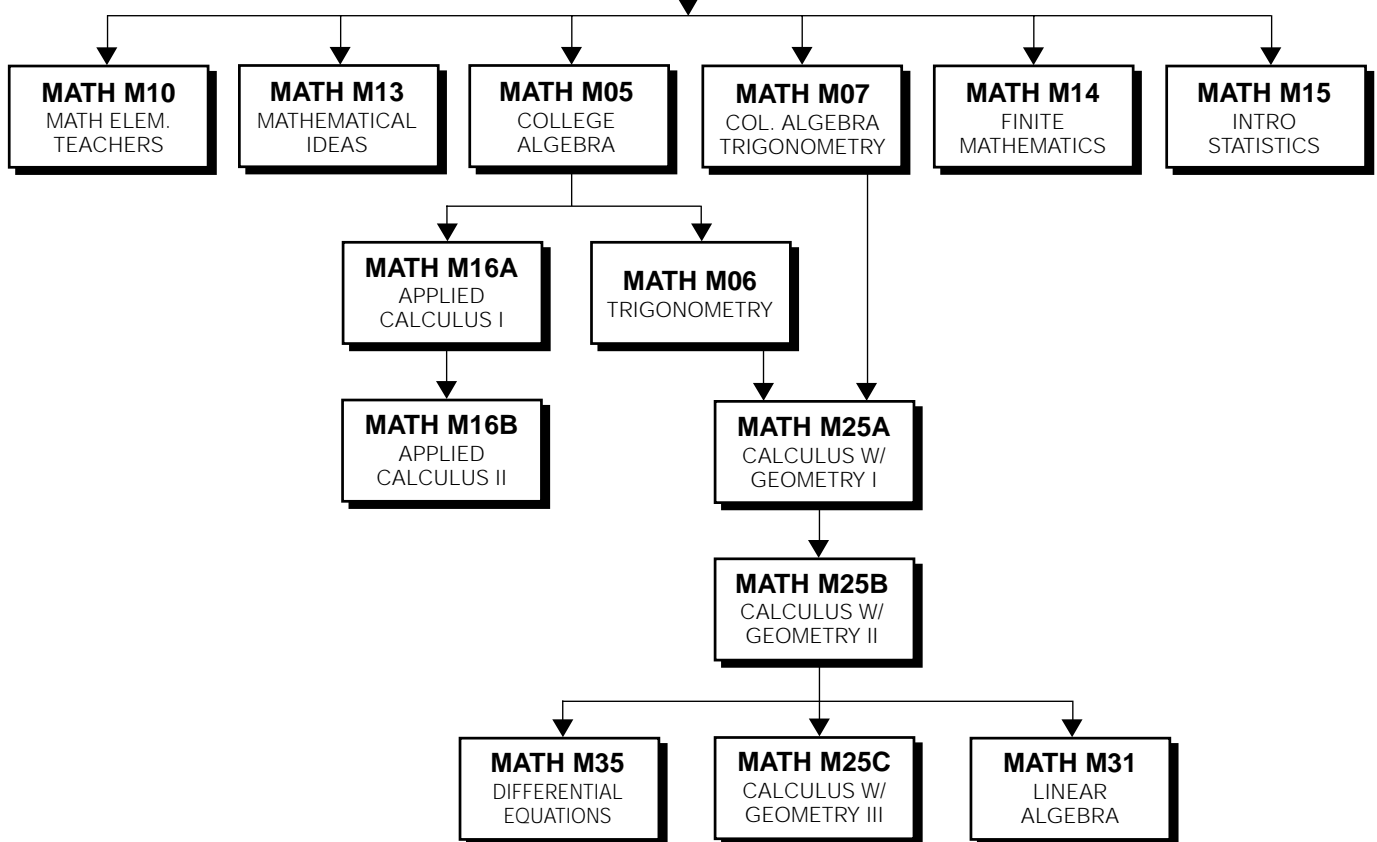
Call the Moorpark College Counseling Office at (805) 378-1428
to schedule an appointment.

Sequence of Mathematics Courses at Moorpark College

NON-TRANSFERABLE COURSES



TRANSFERABLE COURSES



Moorpark College Mathematics Self-Placement Guide

Welcome to Moorpark College.

This guide will help you select your first mathematics course.

Section 1: Mathematics at Moorpark College

In this section, we'll briefly look at the mathematics courses offered at Moorpark College. We'll also talk about how to succeed in a mathematics course, and decide whether you should start with a non-transferable or with a transferable mathematics course.

■ Getting Acquainted with the Moorpark College Mathematics Program

The chart on the facing page gives you an overview of the mathematics courses offered at Moorpark College. There are two categories of courses: non-transferable courses (those above the broken line) and transferable courses (those below the broken line). Let's take a closer look at each category.

Non-Transferable Courses: These courses are generally equivalent to high school courses. They do not transfer as college credit toward a four-year (B.S. or B.A.) college degree. As the chart indicates, there are three levels for the algebra sequence:

LEVEL 1: Math M09 Pre-Algebra is a review of arithmetic including decimals, fractions and signed numbers. It ends with a brief introduction to algebra. If you wish to strengthen your arithmetic skills before taking an algebra course, begin with Math M09.

LEVEL 2: Math M01 Elementary Algebra is a beginning algebra course. The arithmetic skills taught in Math M09 are necessary to succeed in this course. If your arithmetic skills are good, and if you have not completed a beginning algebra course with a grade of C or better within the last year, begin with Math M01.

LEVEL 3: Math M03 Intermediate Algebra is a second course in algebra. Many of the algebra skills taught in a beginning algebra course (such as Math M01) are necessary to succeed in this course. If you have completed a beginning algebra course with a grade of C or better within the last year, but you have not completed a second algebra course, begin with Math M03.

Math M02 Geometry is a beginning geometry course. If you wish to take Math M02, you should have completed a beginning algebra course with a grade of C or better within the last year.



Transferable Courses: These course are college-level courses. They transfer as college credit toward a four-year college degree. There are two levels of transferable courses:

LEVEL 4: Math M10 Math for Elementary Teachers; Math M13 Math Ideas; Math M05 College Algebra; Math M07 College Algebra & Trig; Math M14 Finite Math and Math M15 Intro Statistics

Mastery of the algebra skills taught in a second course in algebra (such as Math M03) is necessary for success in these courses.

In fact, Math M03, or equivalent high school or college work, is a prerequisite for all Level 4 courses. You will not be permitted to enroll in a level 4 course unless you have satisfied this prerequisite.

You need at least 2 years of algebra in high school to satisfy the prerequisite for Level 4 courses.

LEVEL 5: Math M16A Applied Calculus I; Math M06 Trigonometry; Math M25A Calculus I, and all courses below these on the chart. Each Level 5 course has a prerequisite as indicated in the chart. (For example, Math M25A is the prerequisite for Math M25B.)

You will not be permitted to enroll in a level 5 course unless you have satisfied the prerequisite.

■ Planning for Success in a Mathematics Course

Succeeding in a mathematics course depends on several things. Let's talk about some of them.

Don't underestimate the difficulty of a mathematics course. For most of us, mastering mathematical topics is a challenge. Mathematics courses cover a lot of material in a short period of time. Mathematics courses at Moorpark College often move at about twice the pace of similar high school courses.

Attend class regularly. Mathematics is a very structured subject. Very often, topics taught in one class period are necessary for you to understand what is taught in the next.

Mathematics classes take a lot of time. They require that you do homework for almost every class meeting. Plan on averaging two or more hours of homework for each hour of class. Be sure that you have adequate time. Taking too many other classes, working too many hours, or personal concerns that require a large amount of your time can make it difficult for you to devote the necessary time to your mathematics class.

Don't get behind. Do your mathematics homework as soon as it is assigned. Get help immediately if there is something you don't understand. For example, ask questions in class, see your teacher outside of class, ask a friend for help, get help from the tutorial center, etc.

Don't choose a course at too high a level. Having the necessary background for a mathematics course is very important.

Now, here's a short survey to help you determine how these issues apply to you.



Success Potential Survey

(Circle "Yes" or "No" for each question.)

- | | | |
|---|-----|----|
| Have you completed a math course within the last year with a grade of A or B? | Yes | No |
| Will you be working less than 20 hours per week? | Yes | No |
| Will you be taking 12 class units or less? | Yes | No |
| Will you devote at least 2 hours a day to math homework? | Yes | No |
| Will you attend your math class at least 95% of the time? | Yes | No |
| Will you get help immediately for topics you have trouble with? | Yes | No |
| Are you confident that no personal or job issues will interrupt the semester? | Yes | No |
| Are you determined to pass the math course you select? | Yes | No |



Each "Yes" is an indicator for success in mathematics courses you take. Score one point for every "Yes" you circled, and write your score in the space below. You'll use this score later to help in selecting a mathematics course.

Success Potential Score: _____

■ Choosing Between Non-transferable and Transferable Mathematics Courses

You now need to decide whether your first mathematics course at Moorpark College will be a non-transferable or a transferable course. As you make your decision, here are some things to keep in mind.

Your choice depends on your previous work in mathematics. Getting Acquainted with the Moorpark College Mathematics Program, on page 1, gives you information on the background you need to succeed. Don't take a transferable level course unless you are prepared to do college-level mathematics.

Remember, to take a transferable mathematics course, you must have completed all prerequisite course work. To satisfy the prerequisite for Level 4 courses with high school work, you must have completed at least two years of algebra in high school, with grades of C or better. Also, you should have completed these courses within the last year.

Your choice also depends on the "Success Potential Score" that you found on the previous page. If your Score is 4 or less, you should consider starting with a non-transferable course, even if you have satisfied the prerequisite for a transferable course.

YOUR CHOICE: Non-transferable:_____ Transferable:_____

If you have decided to begin with a non-transferable mathematics course, you should read Section 2: Choosing a Non-Transferable Mathematics Course on pages 4 - 7. This section will help you choose between Math M09 Pre-Algebra, Math M01 Elementary Algebra, Math M03 Intermediate Algebra and Math M02 Geometry.

If you have decided to begin with a transferable mathematics course, you should read Section 3: Choosing a Transferable Mathematics Course on pages 8 and 9. It will explain what you must do to verify that you have satisfied all required course prerequisites. It will also help you determine if you have the algebra skills necessary to do college-level mathematics. It will help you select the college-level mathematics course that is right for you.

■ A Special Note for Learning Disabled Students

LS M07 Basic Math Skills is a foundation math course designed to develop the learning disabled student's ability to perform arithmetic computation and to develop mathematical skills needed for pre-algebra and algebra courses. It features a slower paced curriculum, direct instruction, smaller class size, time for greater instructor attention, the use of manipulatives for hands-on learners and computerized math software for skills reinforcement. Learning disabled students who wish to strengthen their basic computational skills before attempting a pre-algebra or algebra course should consider taking LS M07 Basic Math Skills.

Section 2: Choosing a Non-Transferable Mathematics Course

It is crucial that you choose a mathematics course for which you have the recommended preparation. The course descriptions below include problems illustrating some of the skills you need to succeed in each course. If you don't have these skills, your chance of mastering the course material is small.

Keep this in mind as we now take a closer look at each of the non-transferable mathematics courses. (Make sure you have pencil and paper ready to do the sample problems.)

■ Math M09 Pre-Algebra

Pre-Algebra is a complete review of arithmetic with fractions, decimals, signed numbers and related topics such as percent. It emphasizes problem solving and using arithmetic skills to solve practical problems. It ends with a brief introduction to basic algebra.

If you wish to review and strengthen your arithmetic skills, this course would be a good choice.

Competence with whole number arithmetic is necessary for success in Pre-Algebra. Here are a few problems that illustrate some of the whole number skills you should have before taking this course. Take a few minutes now to do these problems. Use pencil and paper, not a calculator. Answers are on page 7.

$$\begin{array}{r} 1) \quad 372 \\ + 898 \\ \hline \end{array}$$

$$\begin{array}{r} 2) \quad 1231 \\ - 894 \\ \hline \end{array}$$

$$\begin{array}{r} 3) \quad 76 \\ \times 48 \\ \hline \end{array}$$

$$4) \quad 18 \overline{)1008}$$

If you have difficulty with any of these problems, you should consider reviewing whole number arithmetic before taking Pre-Algebra. The Center for Learning Assistance Services (CLAS) at Moorpark College can give you help with this review. The CLAS is located on the second floor of the Library. For additional information, call (805) 378-1556.

■ Math M01 Elementary Algebra

Elementary Algebra is a beginning algebra course. It is equivalent to a one-year beginning algebra course in high school. It also parallels the algebra content of the first year of an integrated high school mathematics program. It is for students who have never taken an algebra course, or who wish to review beginning algebra.

Recommended preparation for this course is Math M09 Pre-Algebra. Your arithmetic skills must be strong for you to master the content of Elementary Algebra. Here are a few problems that illustrate some of the arithmetic skills you should have before taking this course. Take a few minutes now to do these problems. Use pencil and paper, not a calculator. Answers are on page 7.

If you have difficulty with more than one or two of these problems, you should consider taking Math M09 Pre-Algebra before attempting Elementary Algebra.

1) $\frac{3}{4} - \frac{2}{5}$

2) $\frac{1}{2} + \frac{1}{5} \left[\frac{1}{6} \right]$

3) $\frac{2}{5} \div 1\frac{1}{3}$

4) $(-4) + (-6)$

5) $(-16) - (-23)$

6) $(-7)(-15)$

7) $1.25 - 3.68$

8) $1.26 \div 2.1$

9) 16 is 8% of what number?

10) $(-3) + [3(-4) + 7]$

■ Math M03 Intermediate Algebra

Intermediate Algebra is a second course in algebra. It is equivalent to a one-year intermediate algebra course in high school. It also parallels the algebra content of the second year of an integrated high school mathematics program. It is for students who have, within the last year, completed a beginning algebra course (with a grade of C or better), or who wish to review intermediate algebra.

Recommended preparation for this course is Math M01 Elementary Algebra. You must have a strong beginning algebra background, if you want to master the content of Intermediate Algebra. Here are a few problems that illustrate some of the beginning algebra skills you should have mastered before taking this course. Take a few minutes now to do these problems. Use scratch paper. Answers are on page 7.

If you have difficulty with more than one or two of these problems, you should consider taking Math M01 Elementary Algebra before attempting Intermediate Algebra.

1) Solve for x : $3x - 4 = -10$

2) Solve for x : $2x - 4(x - 2) = 2x + 4$

3) Multiply: $(2x + 3)(x + 5)$

4) Simplify: $(x^2x^3y^3)^2$

5) Remove parentheses and combine like terms: $x^2(2x + 3) + 2x(3x^2 + 5x)$

6) Solve the system: $x - 2y = 1$
 $2x + y = 7$

7) Reduce to lowest terms by factoring and removing common factors: $\frac{x^2 + 5x}{x^2 - 25}$

8) Use the Quadratic Formula, $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, to solve $x^2 + 3x + 1 = 0$.

9) Find the x - and y - intercepts for the graph of $2x + y = 4$.

10) The revenue from sales of widgets is given by the equation $R = 12x - x^2$, where x is the number of widgets sold and R is the revenue. How many widgets must be sold for the revenue to equal 36?

Math M03 Intermediate Algebra is the gateway to college-level transferable mathematics courses. The following problems are examples of the content of this course. They are not problems you should be able to do before taking Intermediate Algebra. Rather, they illustrate some of the skills you will learn in Intermediate Algebra.

Graph showing the vertex and intercepts: $y = x^2 - x - 6$. Given $f(x) = \frac{x}{x+1}$, find $f(x-1)$.

Rewrite $\log \left[\frac{x}{x+5} \right]$ as a difference of two logarithms. Solve for p : $pr^2 - 2qr = pq^2$.

■ Math M02 Fundamentals of Geometry

Recommended preparation for this course is Math M01 Elementary Algebra.

Fundamentals of Geometry is a beginning course in geometry. It is equivalent to a high school geometry course. As some basic geometry is included in Elementary Algebra and Intermediate Algebra, a full course in geometry is not necessary for most students. However, certain college majors and programs do require or recommend a course in geometry. You should see a counselor if you think you may be required to take Math M02.

Making Your Choice

Be conservative in choosing your first Moorpark College mathematics course. Consider choosing a course that duplicates the last mathematics course you took. By reviewing, you can greatly improve your chance of mastering the material in more advanced courses. If you are not confident that you have the background and resources needed to succeed in a particular course, drop back a level.

Be prepared to devote adequate time, effort and determination to the mathematics course you choose. Look again at your "Success Potential Score". The lower it is, the smaller your chance of mastering the course material. Try to adjust your circumstances or your attitude so that you can honestly change your "no" answers on the Success Potential Survey to "yes's".

What's Next?

If you have successfully chosen your first mathematics course, then the next step is registration. If you are still unsure of what your first mathematics course should be, here are some sources of additional help and information:

1. Read the Moorpark College Catalog (available in the bookstore), and the current Class Schedule.
2. Meet with a Moorpark College counselor. Call (805) 378-1428 for an appointment.
3. Talk to a mathematics instructor. Mathematics Department offices are located in the LMC Building.

Math M09 Answers: **1)** 1270 **2)** 337 **3)** 3648 **4)** 56

Math M01 Answers: **1)** 7/20 **2)** 8/15 **3)** 3/10 **4)** -10 **5)** 7 **6)** 105 **7)** -2.43 **8)** 0.6 **9)** 200 **10)** -8

Math M03 Answers: **1)** -2 **2)** 1 **3)** $2x^2 + 13x + 15$ **4)** $x^{10}y^6$ **5)** $8x^3 + 13x^2$ **6)** (3, 1)

7) $\frac{x}{x-5}$ **8)** $x = \frac{-3 \pm \sqrt{5}}{2}$ **9)** (2, 0) and (0, 4) **10)** 6 widgets

Section 3: Choosing a Transferable Mathematics Course

■ Satisfying Prerequisites

Every transferable mathematics course has a prerequisite associated with it. Math M03 Intermediate Algebra is the prerequisite for all Level 4 transferable courses. Level 5 transferable courses (such as Math M16A or Math M25A) all have prerequisites beyond Math M03.

You will not be permitted to enroll in any Level 4 or Level 5 course until you have satisfied its prerequisite.

You can satisfy a prerequisite by either completing the prerequisite course at Moorpark College, or by providing evidence that you completed equivalent course work in high school or at another college. You must earn a grade of C or better in all prerequisite courses.

If you wish to satisfy a prerequisite with course work from a high school or another college, you must:

1. submit copies of official transcripts showing the prerequisite course work, and
2. meet with a Moorpark College counselor to verify that the course work is equivalent to the prerequisite. (Call (805) 378-1428 for an appointment.)

You must submit transcripts and see a counselor before registering.

You will find additional information on mathematics course prerequisites in the Mathematics Section of the Moorpark College Catalog and in the current Class Schedule.

■ Background for Success

Level 4 transferable courses, Math M10 Math for Elementary Teachers, Math M13 Math Ideas, Math M05 College Algebra, Math M07 College Algebra & Trig., Math M14 Finite Math. and Math M15 Intro. Statistics, all have Math M03 Intermediate Algebra as a prerequisite. A good background in intermediate algebra can help you succeed in these courses. This is especially true of Math M05 College Algebra, and Math M07 College Algebra & Trig., because these two courses are continuations of Math M03 Intermediate Algebra.

Here's a selection of problems that illustrate some of the intermediate algebra skills that can contribute to your success. Take some time now to work through these problems. Answers are on the next page.

- 1) Solve for x : $\frac{x}{4} - \frac{x+2}{6} = \frac{x}{3}$
- 2) Solve for x : $a = \frac{x-b}{y}$
- 3) Multiply: $(2x - 3)(x^2 - 5x + 1)$
- 4) Reduce to lowest terms by factoring and removing common factors: $\frac{2x^2 - x - 3}{4x^2 - 9}$
- 5) Simplify completely: $3x - 2x [4 - (2x-1)]$
- 6) Graph showing x - and y - intercepts: $2x - 5y = 10$
- 7) Solve the system: $2x + y = 7$
 $3x - 5y = 4$
- 8) Find the slope of the graph of $2x + 4y = 7$
- 9) Find the vertex of the parabola $y = x^2 + 3$
- 10) Use the quadratic formula to solve $x^2 + 2x - 1 = 0$
- 11) Solve the inequality $1 \leq \frac{x-3}{2} < 3$ and graph the solution on a number line.
- 12) The height h in feet of a rocket t seconds after launch is given by the equation $h = 144t - 16t^2$.
a) When will the rocket reach a height of 320 feet? b) When will the rocket be back on the ground?

Answers: **1)** $-4/3$ **2)** $x = ay + b$ **3)** $2x^3 - 13x^2 + 17x - 3$ **4)** $(x + 1) / (2x + 3)$ **5)** $4x^2 - 7x$
6) Line with intercepts (5, 0) and (0, -2) **7)** (3,1) **8)** $-1/2$ **9)** (0, 3) **10)** $x = -1 \pm \sqrt{2}$
11) $5 \leq x < 9$ \bullet \circ **12a)** $t = 4$ sec and $t = 5$ sec **12b)** $t = 9$ sec

If you had difficulty with more than one or two of these problems, you should consider taking Math M03 Intermediate Algebra before attempting a college level math course.

Many students who take a transferable math course, even those that are well prepared, need to do some review, either before or during the course. When you take a level 4 transferable math course, you should plan on reviewing topics from intermediate algebra as the need arises. The Center for Learning Assistance Services (CLAS) at Moorpark College can give you help when you need to review. The CLAS is located on the second floor of the Library. For additional information, call (805) 378-1556.

Level 5 transferable mathematics courses, such as Math M16A Applied Calculus I and Math M25A Calculus I, require additional prerequisite skills beyond intermediate algebra. You should meet with a counselor, if you plan to start with a Level 5 course. (Call (805) 378-1428 for an appointment.)

Making Your Choice

Be conservative in choosing your first Moorpark College mathematics course. Consider choosing a course that duplicates the last mathematics course you took. By reviewing, you can greatly improve your chance of mastering the material in more advanced courses. If you are not confident that you have the background and resources needed to succeed in a particular course, drop back a level.

Be prepared to devote adequate time, effort and determination to the mathematics course you choose. Look again at your "Success Potential Score". The lower it is, the smaller your chance of mastering the course material. Try to adjust your circumstances or your attitude so that you can honestly change your "no" answers on the Success Potential Survey to "yes's".

The transferable mathematics course (or courses) you should take depends upon the four-year college or university to which you plan to transfer, and upon the college major you choose.

Almost all colleges and universities require that you take at least one college-level mathematics course as part of their graduation requirements. Information on transfer and graduation requirements for some California colleges and universities is in the Moorpark College Catalog. You can also find information on graduation requirements in the catalog of the college or university to which you plan to transfer.

Many college majors require that you take one or more college-level mathematics courses. For example, a four-year degree in business might require that you take Math M15 Intro. Statistics, or Math M16A Applied Calculus I, or both. For a four-year degree in engineering, you would have to take the three semester calculus sequence, Math M25A, M25B and M25C, as well as other mathematics courses. Be sure that the college-level mathematics courses you take at Moorpark College meet the graduation and major requirements you will need.

What's Next?

If you have successfully chosen your first mathematics course, then the next step is registration. (Be sure to verify that you have satisfied prerequisites before registering.) If you are still unsure of what your first mathematics course should be, here are some sources of additional help and information:

1. Read the Moorpark College Catalog (available in the bookstore), and the current Class Schedule.
2. Meet with a Moorpark College counselor. Call (805) 378-1428 for an appointment.
3. Talk to a mathematics instructor. Mathematics Department offices are located in the LMC Building.

Developed by:
Moorpark College
Mathematics Department

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