

# M125 PRE-CALCULUS MATHEMATICS

Indiana University Southeast

Revised Fall 2008

Coordinator for Mathematics (lower level): Phillip Miller

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Course Number and Name: M125 – Pre Calculus Mathematics

Credit Hours: 3 hours

Prerequisites: M117 – Intermediate Algebra or placement by exam

Course Objectives: By the end of this course, students should be able to

- Solve equations, inequalities, and applications involving the real and complex number systems
- Graph, transform, model, and analyze various equations including: linear, quadratic, absolute value, polynomial, rational, inverse, exponential and logarithmic functions and conic sections

Textbook: Fundamentals of Precalculus by Dugopolski; Pearson Addison Wesley, 2<sup>nd</sup> Edition

ISBN: 0-321-50697-9

MathXL online homework is available with this textbook.

	Chapter	Sections	Comments for Instructors
A	Appendix: Basic Algebra Review	A.1 – A.4	Recommendation: assign some problems as homework and only go over questions.
1	Graphs and Functions	All	Skip the use of graphing calculators. Suggestion: cover section 1.9 on inverse functions with chapter 4 (to balance exams 1 & 3 and emphasize that exponents and logarithms are inverses)
2	Polynomial and Rational Functions	2.1 – 2.3 2.5 – 2.7	Skip the use of graphing calculators Skip 2.4 (The Theory of Equations)
4	Exponential and Logarithmic Functions	All	Skip the use of graphing calculators Students typically have difficulty with this chapter. Try to spend an extra day on 4.4.
5	Conic Sections	5.2 – 5.3	Minimal coverage of ellipses and hyperbolas ( <b>skip foci</b> )

Notes: M125 is the prerequisite for M215 Calculus as well as the two semester sequence of Calculus for Purdue Technology students. Although the list of course topics is similar to those of M122 College Algebra, this course should be taught at a higher mathematical level. Complex numbers are included in M125, but not in M122. Students should be able to review topics in the Appendix (Basic algebra review) independently to establish the appropriate level of the class and provide time for thorough coverage of functions, exponentials, and logarithms.

A graphing calculator should NOT be allowed on exams. The upper level math department will not allow them to be used on exams in M215, and since M125 is a prerequisite we need to prepare students for that.

Grading: Each instructor may choose a grading scheme that best suits his/her particular teaching style and class temperament. The final exam is required to be counted as at least 25% of the semester grade. The instructor is responsible for grading the exams for his/her section with the completed exams returned to the math department. A Final Review with answers can be found at

<http://homepages.ius.edu/pmiller/ReviewForFinals.htm> or in the School of Natural Sciences office.

## GENERAL SYLLABUS FOR M125 – Pre Calculus

Text: Fundamentals of Precalculus by Dugopolski; Pearson Addison Wesley, 2<sup>nd</sup> Edition  
ISBN: 0-321-50697-9

Calculator: Scientific (no graphing calculators on exams)

Prerequisites: M117 Intermediate Algebra or placement by exam

Course Objectives: By the end of this course, students should be able to

- Solve equations, inequalities, and applications involving the real and complex number systems
- Graph, transform, model, and analyze various equations including: linear, quadratic, absolute value, polynomial, rational, inverse, exponential and logarithmic functions and conic sections

Students with Disabilities: If you have specific physical, psychological or learning disabilities and require accommodations, please let me know early in the semester so that your learning needs may be appropriately met. You will need to provide documentation of your disability to the Coordinator of Disability Services located in University Center South, Room 203, 941-2243. Additional information about the Office of Services for Students with Disabilities may be obtained at: <http://www.ius.edu/ASC/DisabilityServices/>

Attendance Policy: Attendance is a key factor in academic success. Class attendance is required. Illness is usually the only acceptable excuse for absence from class. Other absences must be explained to the satisfaction of the instructor, who will decide whether missed assignments may be made up. A student absent from class bears full responsibility for all material covered in class. *Individual instructors can include particular requirements and/or penalties for absences.*

Help Outside of Class:

- **Math Lab:** Location: Life Sciences, Room 101; 941-2670. Students may walk in and use the facilities at any time (free of charge) without an appointment. Tutor schedule is online at <http://www.ius.edu/mathlab/> and the bulletin board by the lab.
- **Private Tutors:** Please visit the Student Development Center, University Center South 203, to sign-up for a tutor. Most students get a tutor within 24 hours. The cost is \$5.00 per hour (non-refundable) and must be paid for in advance. For more information go to: <http://www.ius.edu/sdc/main/assist1.htm>

Bad Weather Policy: When there is bad weather in the area, a decision is made about whether the campus should be closed or open on a delayed schedule as soon as possible. The decision is independent of the decisions of school corporations and the other colleges in the area. Off-campus classes do not meet if campus is closed or if the school building in which they are held is closed.:

**Delay Schedule: Monday through Friday classes:**

8 a.m. classes meet from 10 a.m. until 10:55 a.m.

9:30 a.m. classes meet from 11 a.m. until 11:55 a.m.

11 a.m. classes meet from 12 noon until 12:55 p.m.

Other classes meet at regular times.

**Saturday Classes:**

Morning classes meet from 10:30 a.m. until 12 noon.

Afternoon classes meet at regular times.

Tentative Daily Schedule:

*Below is a sample daily schedule. This is only a suggestion. As long as you cover the sections indicated during the semester, you may structure the organization of the course as you wish.*

<u>Day</u>	<u>Sections</u>
1	1.1 (focus on absolute value problems), 1.2
2	1.3 (skip example 9)
3	1.4
4	1.5
5	1.6
6	1.7
7	1.8
8	Review
9	Exam 1
10	2.1
11	2.2
12	2.3
13	2.5
14	2.6
15	2.7
16	Review
17	Exam 2
18	1.9
19	4.1
20	4.2
21	4.3
22	4.4 day 1 (solving equations)
23	4.4 day 2 (applications)
24	Review
25	Exam 3
26	5.2 (sketch graphs using center and vertices; skip foci)
27	5.3 (sketch graphs using vertices and asymptotes; skip foci)
28	Review for Final Exam

Comprehensive Final Exam; Time and Date

**\*\* If a student fails the final exam, the maximum course grade possible is a C.\*\***