Course Syllabus

Course #: MTH 2350 **Course Name:** Precalculus

Division: Arts & Sciences

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Class Days: **Class Time:**
Location: Classroom: Laboratory:
Credit Hours: 4 **Contact Hours:** 4 **Lab Hours:** 0 **Lecture Hours:** 4

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Instructor: **Office Location:**
Phone: **Email Address:**
Office Hours:
Division Office/Location: A202 **Division Fax:** 419.355.1248
Full-time Contact Person: **Phone(s):**

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Course Description:
This course covers geometric aspects of trigonometry and algebra including graphs of trigonometric functions and their inverses, inequalities, trigonometric identities, analytic geometry of lines, and curve fitting. Graphing calculator required.

Prerequisite(s): Grade of "C" or better in MTH 1310 AND MTH 1320 or Placement Testing
No credit given if MTH 2310 and MTH 2320 have been taken.

Corequisite(s): None

Entry Level Skills and Knowledge:
Intermediate mathematics and algebra skills.

Required Texts, Supplies and Equipment:
Precalculus, Third Edition by Margaret Lial, John Hornsby, and David Schneider. Published by Addison Wesley.

Hand-held Calculator: TI-83+ or TI-84+ required

Grading:
The final course grade will be determined as follows:

Daily Grades (quizzes, homework, class participation, etc.)	25%
Tests	50%
Comprehensive Final Exam	25%

Grading scale is as follows:

90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
0 – 59 = F

Learning Outcomes:
General Education
Evaluate arguments in a logical fashion.

Technical Education

Course Outcomes:
Upon completion of this course, students should be able to perform these competencies:

1. Gain an understanding of advanced algebra and trigonometry.
2. Solve equations and inequalities.
3. Graph various types of functions and their inverses.
4. Verify and manipulate trigonometric identities.
5. Identify types of sequences and series and manipulate them.

Assessment of Student Learning:
This course may include a project that is one of several that will be used by faculty to assess student academic performance in the program. A panel of faculty will review all (projects or whatever assessment activity you are doing), then assess and summarize the academic performance of students at this point in the program. The results of this assessment will be shared among the department faculty, used to identify needed changes or improvements, and submitted to the Student Academic Assessment Committee as part of the college's overall student academic assessment effort.

Assessment Project and Measurement in course (if any):
TBA

Plan of Work:
Session Date Activities
See topical outline attached at back of this syllabus.

Course Requirements:
There will be an assignment given each class period. This should be completed by the next class meeting and will be discussed at that time.

Policies

Department Policies: The schedule of tests will be followed as closely as possible. Not all of the course work is in the text. It is important to be in class and to take notes. Students are expected to read the text before class discussion.

Tests must be taken on the scheduled day. Failure to do so will result in a ten percent (10%) penalty. Make-up tests must be taken within one (1) week of the date that the test is given in class.

It is expected that the student will participate by having assignments completed on time, answering questions in class, asking pertinent questions, being on time, and having a cooperative attitude.

Final Exam Policy: The final exam is comprehensive. All students, regardless of grade average, must take the comprehensive final exam for this course.

Course Withdrawing: If for any reason you need to withdraw from this course, be certain that you do so according to College procedure. It is your responsibility to know and follow this procedure. If you simply stop coming to class, without officially withdrawing from the course, your grade is an automatic "F." Please follow official College procedure for withdrawing from this or any course.

College Academic Policies are located in the College Catalog. A copy of the current catalog may be picked up in any of the division offices or admissions. The list of college policies is also available online at https://www.terra.edu/register/Collegecat/policies.asp.

Support Services: The College offers a number of support services to assist in your success in this course and all courses. Among these services are the Writing & Math Center in B105, the Office of Learning Support Services, which coordinates the campus disability services and tutoring programs, the computer labs, and the computers in the atriums.

Any student who feels he/she may need an accommodation based on the documentation of a disability should contact the Office of Learning Support Services privately to discuss his/her specific issues. Please contact the OLSS at (419) 334-8400 X 208 or visit 100 Roy Klay Hall (Building A) to coordinate reasonable accommodations.

If you have a documented disability and are receiving academic accommodations through the Office of Learning Support Services, please schedule a meeting with your instructor in a timely manner so that we may discuss how these services will be arranged.

Tutoring services are available to students beginning the second week of every quarter. Students requesting tutoring services should obtain a tutor request form from the OLSS in 100 Roy Klay Hall (Building A) or online at the Terra website. Please note that instructor verification and acceptance of the Student Learner Agreement is necessary for all tutoring requests. All requests should be submitted to 100 Roy Klay Hall (Building A).

MTH 2350 Topical Outline:

Session	Course Content	Reading Assignment	Activity
1	Course Introduction		
	R.5 Rational Expressions	pp. 46 – 55	p. 52 – 1-5 odd, 11-35 every other odd (11, 15, 19, etc.), 39, 41, 45-57 every other odd, 59-67 every other odd
	R.6 Rational Exponents	pp. 55 – 65	p. 62 – 15-35 odd, 37-69 every other odd, 73, 77
	R.7 Radical Expressions	pp. 65 – 75	p. 73 – 21-57 every other odd, 59-79 every other odd, 83-89 odd
2	1.1 Linear Equations	pp. 85 – 92	p. 90 – 1-7 odd, 9-25 every other odd, 39-47 odd, 61-67 odd
	1.3 Complex Numbers	pp. 107 – 115	p. 113 – 17-41 every other odd, 43-49 odd, 51-79 every other odd, 83-93 odd
	1.4 Quadratic Equations	pp. 115 – 125	p. 123 – 13-41 odd, 45-61 odd
3	1.6 Other Types of Equations	pp. 136 – 146	p. 144 – 1-77 every other odd
	1.7 Inequalities	pp. 146 – 160	p. 156 – 1-9 odd, 13-33 every other odd, 39-51 every other odd, 69-85 every other odd
4	1.8 Absolute Value Equations and Inequalities	pp. 160 – 166	p. 164 – 1-23 odd, 27-39 odd, 41-49 every other odd, 51-55 odd
	2.1 Graphs of Equations	pp. 181 – 196	p. 192 – 9-19 odd, 23, 25, 45-51 odd, 57-63 odd, 71, 73
5	**TEST I (Chapters Review and One)**		
6	2.2 Functions	pp. 197 – 213	p. 209 – 17-37 odd, 41-51 odd, 69-81 odd
	2.3 Linear Functions	pp. 214 – 226	p. 221 – 1-17 every other odd, 19, 23, 29, 31, 35-41 odd
7	2.4 Equations of Lines	pp. 227 – 242	p. 236 – 5-21 odd, 27-43 odd
	2.5 Graphs of Basic Functions	pp. 242 – 252	p. 249 – 7-16 all, 17-35 odd, 45
8	2.6 Graphing Techniques	pp. 253 – 267	p. 264 – 1, 3, 19-31 odd, 33-45 every other odd
	2.7 Function Operations and Composition	pp. 268 – 280	p. 276 – 1-13 odd, 33-47 odd, 57-63 odd, 69-71odd
9	3.1 Quadratic Functions and Models	pp. 293 – 313	p. 303 – 1, 3, 9-25 odd, 27-30 all
	3.4 Graphs of Polynomial Functions	pp. 331 – 349	p. 342 – 1-5 odd, 9-27 odd, 31-37 odd, 43-47 odd

Session	Course Content	Reading Assignment	Activity
10	3.5 Rational Functions 4.1 Inverse Functions	pp. 350 – 368 pp. 389 – 402	p. 362 – 17-27 odd, 37-45 odd, 51-67 odd p. 398 – 3-23 odd, 49-61 odd
11	**TEST II (Chapters Two and Three)**		
12	4.2 Exponential Functions 4.3 Logarithmic Functions	pp. 402 – 418 pp. 418 – 432	p. 414 – 1-9 every other odd, 13-27 odd, 43-61 odd p. 427 – 3-29 odd, 57-71 odd
13	4.4 Evaluating Logarithms; Change-of-Base 4.5 Exponential and Logarithmic Equations	pp. 432 – 443 pp. 443 – 452	p. 438 – 1-21 odd, 35-41 odd p. 448 – 1-41 odd
14	5.1 Angles 5.2 Trigonometric Functions	pp. 474 – 481 pp. 481 – 494	p. 478 – 1-9 odd, 13-41 odd, 45-57 odd, 61, 67, 69, 73 p. 490 – 1-9 odd, 13, 15, 23-29 odd, 45-65 odd, 79-91 odd
15	5.3 Evaluating Trigonometric Functions 6.1 Radian Measure	pp. 495 – 508 pp. 534 – 545	p. 502 – 1-19 odd, 35, 37, 41-45 odd, 50-57 all, 59-63 odd, 75-97 odd p. 539 – 1-13 odd, 19-51 odd, 69-73 odd, 77
16	6.2 The Unit Circle and Circular Functions 6.3 Graphs of the Sine and Cosine Functions	pp. 545 – 556 pp. 556 – 574	p. 552 – 1-33 odd, 45-59 odd, 69-81 odd p. 568 – 1-19 odd, 23-51 odd
17	6.4 Graphs of the Other Circular Functions	pp. 575 – 588	p. 585 – 1-51 odd
18	**TEST III (Chapters Four, Five, and Six)**		
19	7.1 Fundamental Identities 7.2 Verifying Trigonometric Identities	pp. 606 – 612 pp. 612 – 621	p. 609 – 1-9 odd, 21-37 odd, 49-63 odd, 73, 75 p. 618 – 1-29 every other odd, 33-67 odd
20	7.3 Sum and Difference Identities 7.4 Multiple Angle Identities	pp. 621 – 632 pp. 632 – 645	p. 629 – 1-45 odd, 51-55 odd, 73-77 odd p. 641 – 1-19 odd, 27-39 odd, 59-71 odd
21	7.5 Inverse Trigonometric Functions 7.7 Equations with Inverse Trigonometric Functions	pp. 645 – 657 pp. 670 – 675	p. 654 – 7, 13-37 every other odd, 41-51 odd, 63-91 odd p. 672 – 5-19 odd, 23-37 odd
22	7.6 Trigonometric Equations 8.7 Polar Equations and Graphs	pp. 658 – 669 pp. 749 – 760	p. 665 – 1-7 odd, 11-49 odd, 55-85 odd p. 757 – 1-61 odd

Session	Course Content	Reading Assignment	Activity
23	8.7 Polar Equations and Graphs (continued) 8.8 Parametric Equations, Graphs, and Applications	pp. 749 – 760 pp. 761 – 768	p. 757 – 1-61 odd, 73, 75 p. 766 – 1-37 odd
24	**TEST IV (Chapters Seven and Eight)**		
25	9.1 Systems of Linear Equations 9.2 Matrix Solution of Linear Systems	pp. 784 – 800 pp. 801 – 812	p. 794 – 1-37 odd, 41, 43, 47-63 odd, 69, 71 p. 808 – 5-43 odd
26	9.3 Determinant Solution of Linear Systems 9.4 Partial Fractions	pp. 813 – 824 pp. 824 – 830	p. 820 – 1-29 odd, 35-41 odd, 49-57 odd, 61-83 odd p. 829 – 1-33 odd
27	9.5 Nonlinear Systems of Equations 11.1 Sequences and Series	pp. 830 – 840 pp. 936 – 947	p. 836 – 1-5 odd, 9-39 odd p. 943 – 1-79 odd
28	11.1 Sequences and Series (continued) 11.2 Arithmetic Sequences and Series	pp. 936 – 947 pp. 947 – 956	p. 943 – 1-79 odd p. 954 – 1-63 odd
29	11.3 Geometric Sequences and Series 11.4 The Binomial Theorem	pp. 956 – 968 pp. 968 – 975	p. 963 – 5-55 odd p. 974 – 1-35 odd
30	Course Review		
31	**COMPREHENSIVE FINAL EXAM**		