

MATH 1750: Calculus for the Life Sciences with Applications I
SYLLABUS for Sections 004, 005, 006 Spring 2012

COURSE INFORMATION

Lecture:

MATH 1750-004, 005, 006: **MWF** 2:00 pm–2:50 pm, Rocket Hall 1520

Instructor: Mr. Dibyajyoti Deb (I go by Deb)

Office: UH 2030C

Office Hours: **MW** 3:00 pm– 5:30 pm

Phone: 419-530-2789

Email: dibyajyoti.deb@utoledo.edu, ddebtoledo@gmail.com

Course Webpage: <http://www.math.utoledo.edu/~ddeb/> (Click on Teaching and then the appropriate course link).

Teaching Assistant: Ms. Liqiong Chen

TA Office: UH 2220

TA Email: liqiong.chen@rockets.utoledo.edu

Textbook: *Calculus for Biology and Medicine*, Third Edition, by Claudia Neuhauser, and *Schaum's Outlines Trigonometry*, Fourth Edition, by Moyer and Ayres.

Prerequisites: Passing grade in Math 1320 or ACT Math of 22 or higher or score of College Algebra placement Test of 12 or higher.

Calculator: A non-programmable graphing calculator is allowed on all quizzes and exams.

Tutoring: Mathematics tutoring is provided by the Learning Enhancement Center (LEC) and Mathematics Learning and Resource Center (MLRC) jointly. It is located in the basement of Carlson Library-phone ext. 2176. LEC tutoring hours: M/R 9am–8pm, T/W 9am–9pm, F 9am–2pm. Link to LEC website:

<http://www.utoledo.edu/utlc/lec/tutoring/index.html>

Grading and Evaluation

Exams

There are 3 in class exams (each 100 points) and one final exam (200 points). No make-up exams will be given. If one exam is missed, the final exam will be worth 300 points. The University of Toledo Missed Class policy will be followed.

Quizzes

Short quizzes of 5–15 minutes will be given in recitation classes based on the homework and the suggested practice problems. There will be 7 quizzes given during the semester from which only the best 5 will count towards your grade. Missing two or scoring low on them will not count against you, therefore there will be no make-up quizzes. Each quiz is out of 30 points, and in total quizzes are worth 150 points.

Homework

Homework will be assigned for each lecture, and will be collected every one or two weeks in your recitation classes on the due dates. There will be 7 homework assignments collected from which only the best 5 will count towards your grade. Missing two or scoring low on them will not count against you, therefore late homework will not be accepted. Homework set is out of 30 points, and in total the five homework sets worth 150 points. Grades are

based on completion, correctness of selected problems, and whether a student is following guidelines for assignments.

Attendance

Attendance is essential for success in the course. You are expected to be present in every lecture and recitation. Random attendance will be taken during your recitation classes which will count towards extra credit.

Guidelines for Assignment

1. Put the following on the first page of each assignment:
Your name
The assignment number
The assignment problems
2. Use $8 \frac{1}{2} \times 11$ loose leaf paper (no spiral edges)
3. Use pencil only.
4. Show the problem number, show the problem and **your work**.
5. Staple your assignments together.
6. Your work must be neat and legible.

Suggested practice problems

Suggested practice problems will be assigned together with the homework problems. They are not collected for grading and will not be counted toward the final grade either. These problems are strongly recommended for students who are pursuing a higher grade in the class.

Extra Credits

There will be 3 extra credit homework assignments during the semester, in total worth 30 points and attendance worth 10 points for a total of 40 extra credit points.

Grading

The final grade will be based on 800 points:

In class tests ($100 \times 3 = 300$)

Final exam (200)

Quizzes ($30 \times 5 = 150$)

Homework ($30 \times 5 = 150$)

and the following grading scale: $A = 93\%+$, $A- = 90\% \leq x < 93\%$, $B+ = 87\% \leq x < 90\%$, $B = 83\% \leq x < 87\%$, etc.

Tentative Course Schedule

Week 1, (1/9-1/13), Review of functions, section 1.1, 1.2, Schaum's 1.1-1.5;

Week 2, (1/16-1/20), Foundations of Trigonometry, 2.1-2.9, 3.1-3.7;

Week 3, (1/23-1/27), Graphing Trigonometric Functions, Schaum's 6.1-6.4, 7.1-7.6;

Week 4, (1/30-2/3), Trigonometric Identities, Schaum's 8.1-8.3, 9.1-9.4;

Week 5, (2/6-2/10), Trigonometric Equations, Schaum's 14.1-14.2;

Week 6, (2/13-2/17), Limits, Section 3.1, 3.2;

Week 7, (2/20-2/24), Limits of Trig Functions, Continuity, Section 3.3, 3.4, 3.5;

Week 8, (2/27-3/2), Definition of Derivative, Section 4.1, 4.2;

Week 9, (3/5-3/9), No classes. (Spring Break);

Week 10, (3/12-3/16), Rules of Differentiation, Section 4.2;
 Week 11, (3/19-3/23), More methods and Derivative of Trig Functions, Section 4.3, 4.4, 4.5;
 Week 12, (3/26-3/30), Derivatives Exponential Functions and Inverse Functions, Section 4.6, 4.7;
 Week 13, (4/2-4/6), Approximation, Extrema Section 4.8, 5.1;
 Week 14, (4/9-4/13), Monotonicity, Convexity, Curve Sketching, Section 5.2, 5.3;
 Week 15, (4/16-4/20), More Curve Sketching, Optimization, L'Hospital's rule, Section 5.3, 5.4, 5.5;
 Week 16, (4/23-4/27), Review;

Tentative Homework and Quiz due dates

Homework 1/Quiz 1, 1/26, R, {Schaum's Chapters 1, 2, 3}
 Homework 2/Quiz 2, 2/2, R, {Schaum's Chapters 6, 7}
 Homework 3/Quiz 3, 2/23, R, {Calculus 3.1, 3.2}
 Homework 4/Quiz 4, 3/1, R, {3.3, 3.4, 3.5}
 Homework 5/Quiz 5, 3/29, R, {4.3, 4.4, 4.5}
 Homework 6/Quiz 6, 4/5, R, {4.6, 4.7}
 Homework 7/Quiz 7, 4/26, R, {5.2, 5.3, 5.4}
 Extra Credit Homework 1, 2/16, R, {Schaum's Chapters 8, 9, 14}
 Extra Credit Homework 2, 3/15, R, {4.1, 4.2}
 Extra Credit Homework 3, 4/12, R, {4.8, 5.1}

Tentative Exam Schedule

Exam 1, 6th Feb., M, {1.1–Schaum's 9.4}
 Exam 2, 14th Mar., W, {Schaum's 14.1-14.2, 3.1–4.2}
 Exam 3, 9th Apr., M, {4.3–5.1}

Final Exam

MATH 1750–004, 005, 006: May 3, 2012, Thursday, 12:30 pm – 2:30 pm

Homework problems and Suggested practice problems

- The underlined boldface numbers are **homework problems** to be collected and graded;
- The regular numbers are **suggested practice problems**.

1.1 : 7, 8, 10, 11, 12, 14, 15, 18, 19, 22, 28, 32, 73, 74, 75, 76, 77, 79, 81, 83.

1.2 : 1, 2, 15, 16, 33.

Schaum's 1.1–1.5 : 1.16(c), 1.17(a), 1.19(a), 1.20(c); 1.16, 1.17, 1.18, 1.19, 1.20.

Schaum's 2.1–2.9 : 2.21(a)(e)(h), 2.23(a), 2.24(c), 2.25; 2.21(b)(g), 2.23(c), 2.24(a)(e)(i), 2.26, 2.27.

Schaum's 3.1–3.7 : 3.18(a), 3.20; 3.18(b), 3.22, 3.24.

Schaum's 6.1–6.4 : 6.12(a)(h), 6.13(b), 6.15(a)(d); 6.12(c)(e)(i), 6.13.

Schaum's 7.1–7.6 : 7.6(b), 7.7(a), 7.8(a); 7.6, 7.7(b), 7.8(d).

Schaum's 8.1–8.3 : **8.20, 8.27, 8.32, 8.41**; 8.23, 8.36, 8.42.

Schaum's 9.1–9.4 : **9.31(a)(d), 9.34(b), 9.38(b)(e)**; 9.30, 9.31(c)(h)(j), 9.34(c)(f), 9.37(b).

Schaum's 14.1–14.2: **14.26, 14.30, 14.34, 14.36, 14.47**; 14.32, 14.37.

3.1: **8, 9, 22, 49, 53**; 1, 3, 6, 11, 12, 13, 14, 15, 19, 29, 33, 35, 37, 41, 43.

3.2: **6, 17, 31, 39, 47**; 3, 8, 11, 15, 19, 20, 26, 35, 45.

3.3: **1, 4, 10, 16, 21**; 7, 13.

3.4: **6, 11, 12, 14, 16**; 2, 5, 18.

3.5: **2**; 4, 5.

4.1: **2, 5, 21, 56**; 66.

4.2: **4, 10, 13, 42, 65**; 1, 7, 16, 19, 48.

4.3: **4, 13, 50, 63, 72**; 1, 7, 10, 16, 18, 35, 38, 53, 55, 57, 60, 66, 69, 71, 84.

4.4: **5, 17, 50, 55, 68**; 8, 11, 24, 27, 40, 47, 52, 57, 60, 66, 73, 76, 83, 86.

4.5: **1, 16, 28, 52**; 4, 7, 10, 19, 25, 37, 40, 53, 56, 66.

4.6: **4, 10, 17, 21, 33**; 1, 13, 25, 29, 36, 39, 44.

4.7: **2, 7, 23, 37, 74**; 5, 10, 22, 26, 32, 40, 43, 47, 65, 75, 76.

4.8: **5, 7, 13, 46**; 2, 9, 19, 29, 41.

5.1: **4, 17, 49, 51**; 1, 19, 24, 35.

5.2: **5, 14, 18**; 9, 15, 21, 28.

5.3: **14, 22, 28, 37**; 1, 15, 20, 21, 31, 39.

5.4: **5, 17**; 22.

5.5: **4, 19, 25**; 1, 10, 13, 22, 31, 36, 39, 42, 45.

Honesty

All students are responsible for maintaining the highest standards of honesty and integrity in every phase of their academic careers. The penalties for academic dishonesty are very severe and ignorance is not an acceptable defense. Academic dishonesty will be dealt in a manner consistent with the university's policy statement on academic dishonesty (see <http://www.utoledo.edu/dl/students/dishonesty.html> for more information).

Important Dates

- No classes on Jan. 16, Mar. 5-9.
- Last Day to Add/Drop - Jan. 23.
- Last Day to Withdraw - Mar. 23.