

Fall 2015

MATH 1002

Tumulesh Solanky
University of New Orleans

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MATH 1002 Mathematics Freshman Learning Community, 1 Credit
Fall Semester 2015

Instructor: Tumulesh Solanky

Prerequisites: Math 2314 with a grade of C or better.

Class Time: 12:30 mm – 1:20 pm Tuesday

Classroom: Math 219

Office: Math 248/207

Office Hours: 9:30 am – 11:00 am Monday to Thursday, also by appointment.

Phone: 280-6115

E-mail Address: tsolanky@uno.edu

Required Materials: No Textbook is required.

Prerequisites: Consent of the department. Open to freshmen only. Must be eligible for any courses in which co-enrollment is required.

Course Summary: An introduction to applications of mathematics in sciences and engineering. Practical real world mathematical applications from various disciplines will be used to emphasize quantitative and analytical skills. Selected topics will vary each semester. Students may be co-enrolled in a specific section of one or more other courses, depending on topic. May be repeated once for a total of two credit hours maximum.

Co-enrollment: We are anticipating the students who will take Math 1002 will co-enroll for one or more additional courses to provide additional opportunities to work in small groups established by the learning community. This would greatly increase the social integration and retention within the university. The mathematics courses in which we will co-enrollment are the following:

MATH 1115 College Algebra 3 cr.

Real numbers and equations, functions, polynomial functions and graphs, exponential and logarithmic functions. A strong component of this course will be applications taken from different areas of concentration.

MATH 1125 Precalculus Algebra 3 cr.

Prerequisites: MATH 1115 with a grade of C or better. Fundamentals, functions, polynomials and rational functions, exponential and logarithmic functions.

MATH 1126 Precalculus Trigonometry 3 cr.

Prerequisites: MATH 1125 with a grade of C or better. Trigonometric functions of real numbers, trigonometric functions of angles, analytic trigonometry, systems of equations and inequalities, the binomial theorem. Credit for both MATH 1116 and 1126 will not be allowed.

MATH 2114 Calculus I 4 cr.

Prerequisites: Math 1126 with a grade of C or better. Limits; derivatives; implicit differentiation; the Chain Rule; extrema; the first derivative. test; optimization; related rates; Newton's method; differentials; integration; the Fundamental Theorem of Calculus;

area between curves; solids of revolution; arc length; surfaces of revolution; exponents; logarithms. This course requires an additional recitation hour.

Statistical Software's: The statistical software SAS will be used for statistical modelling and data visualization.

Reference Books:

Highly recommended reference book: A Mathematician Reads the Newspaper, 2013, by John Allen Paulos; Publisher: Basic Books; First Trade Paper Edition edition; ISBN-10: 0465089992, ISBN-13: 978-0465089994.

Other reference books are:

1. A Mathematician Reads the Newspaper, 2013, by John Allen Paulos; Publisher: Basic Books; First Trade Paper Edition edition; ISBN-10: 0465089992, ISBN-13: 978-0465089994.
2. Naked Statistics: Stripping the Dread from the Data, 2014, by Charles Wheelan, Publisher: W. W. Norton & Company; ISBN-10: 039334777X, ISBN-13: 978-0393347777.
3. Statistics for Research, 2004, by Shirley Dowdy, Stanley Wearden, and Daniel Chilko, Publisher: Wiley-Interscience, ISBN-10: 047126735X, ISBN-13: 978-0471267355.
4. Thinking Like an Engineer: An Active Learning Approach, 2014 by Elizabeth A. Stephan, David R. Bowman, William J. Park, Benjamin L. Sill, and Matthew W. Ohland, Publisher: Prentice Hall, ISBN-10: 0133593215, ISBN-13: 978-0133593211.
5. Introduction to Statistics in Pharmaceutical Clinical Trials, 2008, by Todd Durham and J Rick Turner, Publisher: Pharmaceutical Pr, ISBN-10: 0853697140, ISBN-13: 978-0853697145.

Tentative Course Schedule

August 25: Intro, time management
Sept 1: Pre-test, survey, introduction to class 2
Sept 8: Introduction to statistical hypothesis construction
Sept 15: Data collection
Sept 22: STEM Expert # 1: Introduction of application
Sept 28: STEM Expert # 1: continued
Oct 6: STEM Expert # 1: continued
Oct 13: Project Report based on Continue Expert # 1
Oct 20: **Discussion based on STEM expert**
Oct 27: STEM Expert # 2: Introduction of application
Nov 3: STEM Expert # 2: continued
Nov 10: Discussion 10
Nov 17: Review papers/class project
Nov 24: Post-test, survey, wrap-up discussion, final paper due
Dec 1: Last day of class

Course Notes

1) Student Learning Objectives: After completing this course, students will be able to:

1. Read and understand scientific articles of statistical nature.
2. Understand how scientists use statistical tools to prove/disprove scientific hypotheses.
3. Learn scientifically accepted methods of data collection and data reporting.
4. Analyze tables and graphs in scientific papers.
5. Summarize scientific information by constructing appropriate illustrative tables and graphs.
6. Communicate scientific information in oral and written form.
7. Effectively work as a member of a team to carry out scientific inquiry. Develop skills to manage time, well-being, and personal resources.
8. Develop learning strategies to manage the University of New Orleans academic environment.
9. Gather information on campus resources that support academic growth and development as UNO community members.
10. Integrate information concerning career exploration, community service, wellness, and involvement to become a successful, well-rounded student.

2) Office hours: Hours may be altered as necessary due to changing schedules, new assignments, meetings, etc., during the semester. Come to class, check my door (Math 248) or consult Moodle for current office hours each week.

3) Attendance: You must attend class every meeting. Missing class in this course seriously affects your ability to carry out assignments and puts an extra burden on other class members. Contact the instructor in advance if you know you will miss class. If you miss class unexpectedly, contact the instructor as soon as possible and provide a written excuse for the absence. It will not be possible to make up daily problems missed through unexcused absences.

4) Small group work: The class will be divided into small working groups of 4-5 students to facilitate detailed discussion and group problem solving. Each working group will be responsible for leading two discussions during the semester. In order to lead the discussion, each group will prepare 3-5 focus questions on the day's topic and present them to the class at the beginning of the discussion. Working groups will use Moodle to communicate outside of class as necessary.

5) Schedule of activities: Each class will begin with a 10-15 minute session on data analysis or interpretation relevant to the day's topic. The class will be given a table or figure to analyze from the original literature, or a data set to summarize. Each class member will complete the assignment individually, and then compare notes with their small working group to come to a consensus, which is then presented to the class. The balance of each session is devoted to open discussion of the day's topic, led by the working group of the day.

6) Paper: Students will write a brief literature review paper on a topic of their choosing. Papers should include three or more references on the topic, and should be a minimum of 5 pages, double spaced. Topics must be approved by the instructor.

7) Grading: Point distributions are as follows:

<u>Activity</u>	
Individual answers to daily problems	60%
Group-lead discussions	10%
Participation in discussion	10%
Paper	20%

8) Course evaluation: This project is being funded by a grant from the Howard Hughes Medical Institute. As part of grant expectations, an evaluation of project usefulness and impact will be conducted. All students are requested to participate in the project evaluation.

Student Conduct:

The University of New Orleans (UNO) is a multicultural community composed of diverse students, faculty and staff. UNO will not tolerate discrimination or harassment of any person or group of persons based on race, color, religion, sex, disability, national origin, age, sexual orientation, marital or veteran status or any other status protected by law. Each member of the university is held accountable to this standard, which is strongly reflected in this code.

Academic Dishonesty:

Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at <http://www.studentaffairs.uno.edu>.

Accommodations for students with disabilities:

It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to <http://www.ods.uno.edu>.

How class will be taught: This course is a lecture based course. Routinely, the class will meet in a computer lab for statistical modeling and data analysis.

Expectations of students: Students are expected to review the topics as assigned in class. Students are also expected to arrive on time, remain for full class session, conduct themselves in a respectful manner to other students and the instructor and not use cell phones during class.

Procedures of class: Instructor will lecture the material and do examples to show data analytics and statistical modeling and predictive analysis based on selected data sets.

Criteria for each graded assignment: Assignments must be completed by the due date. Students are required to show work in order to receive full credit on test problems.

Incomplete or late coursework: Late assignments will not be accepted.

Student Support Services: Your instructor is your first resource. Office hours are available for you if you should any questions. .

Important Dates*

Last day to adjust schedule w/out fee 08/18/2015
Semester Classes Begin 08/19/2015
Last day to adjust schedule w/fee,
or withdraw with 100% refund..... 08/25/2015
Last day to apply for December commencement..... 09/25/2015
Final day to drop a course or resign 10/14/2015
Mid-semester examinations10/05-10/09/2015
Final examinations.....12/07-12/11/2015
Commencement 12/18/2015

**Note: check Registrar's website for Saturday and A/B sessions, and for items not listed here: <http://www.registrar.uno.edu>*

Fall Semester Holidays

Labor Day 09/07/2015
Mid-semester break10/15-10/16/2015
Thanksgiving.....11/26-11/27/2015

Withdrawal Policy – Undergraduate only

Students are responsible for initiating action to resign from the University (withdraw from all courses) or from a course on or before dates indicated in the current Important dates calendar. Students who fail to resign by the published final date for such action will be retained on the class rolls even though they may be absent for the remainder of the semester and be graded as if they were in attendance. Failure to attend classes does not constitute a resignation. Check the dates on the Registrar's website, <http://www.registrar.uno.edu>. Please consult The Bulletin for charges associated with dropping and adding courses.

Incomplete Policy – Undergraduate only

The grade of I means *incomplete* and is given for work of passing quality but which, because of circumstances beyond the student's control, is not complete. The issuance of the grade of I is at the discretion of the faculty member teaching the course. For all graduate and undergraduate students, a grade of I becomes a grade of F if it is not converted before the deadline for adding courses for credit (as printed in the Important Dates Calendar) of the next regular semester including summer semester.

Repeat Policy

When a student is permitted to repeat a course for credit, the last grade earned shall be the one which determines course acceptability for degree credit. A student who has earned a C or better in a course may not repeat that course unless, (1) the catalog description indicates that the course may be repeated for credit, or (2) the student's Dean gives prior approval for documented extenuating circumstances.

Graduate Policies

Graduate policies often vary from undergraduate policies. To view the applicable policies for graduate students, see the Graduate Student Handbook: <http://www.uno.edu/grad/documents/GraduateStudentHandbook2014.pdf>

Academic Dishonesty Policy

<http://www.uno.edu/student-affairs-enrollment-management/documents/academic-dishonesty-policy-rev2014.pdf>

Safety Awareness Facts and Education

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here:

<http://www.uno.edu/student-affairs-enrollment-management/>

UNO Counseling Services and UNO Cares

UNO offers care and support for students in any type of distress. Counseling Services assist students in addressing mental health concerns through assessment, short-term counseling, and career testing and counseling. Find out more at <http://www.uno.edu/counseling-services/>. First-year students often have unique concerns, and UNO Cares is designed to address those students succeed. Contact UNO Cares through <http://www.uno.edu/fye/uno-cares.aspx>.

Emergency Procedures

Sign up for emergency notifications via text and/or email at E2Campus Notification: <http://www.uno.edu/ehso/emergency-communications/index.aspx>. All emergency and safety procedures are explained at the Emergency Health and Safety Office: <http://www.uno.edu/ehso/>.

Diversity at UNO

As the most diverse public university in the state, UNO maintains a Diversity Affairs division to support the university's efforts towards creating an environment of healthy respect, tolerance, and appreciation for the people from all walks of life, and the expression of intellectual point of view and personal lifestyle. The Office of Diversity Affairs promotes these values through a wide range of programming and activities. <http://diversity.uno.edu/index.cfm>

Learning and Support Services

Help is within reach in the form of learning support services, including tutoring in writing and math and other supplemental instruction. Visit the Learning Resource Center in LA 334, or learn more at <http://www.uno.edu/lrc/>.

Affirmative Action and Equal Opportunity

UNO is an equal opportunity employer. The Human Resource Management department has more information on UNO's compliance with federal and state regulations regarding EEOC in its Policies and Resources website: <http://www.uno.edu/human-resource-management/policies.aspx>