Math 351.71W  Topics in Math for Elementary Teachers II - Online (3 hrs)
Summer II Session 2012

Contact Information
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Instructional Materials

Graphing paper

Calculators: The statistics portion of this course will integrate the use of a graphing calculator. Class demonstrations and instructions will be given based on a TI-83 or TI-84 calculator. If you choose to use another type (such as Casio), it is your responsibility to learn how to use it for statistics.

Course Description
This course is designed for education majors. Topics in this course include: ratio and proportion, percents, statistics, probability, geometry and measurement. Students should already have substantial skills in these areas. Problem solving under girds all of these topics. The course focuses on underlying concepts and multiple techniques of explaining the concepts. Prerequisite Math 350.

This course is designed for elementary education majors and students seeking certification to teach grades K-8.

Course Outcomes/Objectives
The learner will be able to:
1. List outcomes of a probability experiment and compute probabilities for events.
2. Interpret and construct statistical graphs.
3. Calculate measures of central tendency and measures of variability for a given data set.
4. Identify the correct geometric formula to calculate two and three-dimensional measurements of various figures and solids.
5. Use transformational geometry.
6. Use appropriate technology to enhance mathematical thinking and understanding and to solve mathematical problems and judge the reasonableness of the results.
Technology Requirements
This is an internet course. This course will be a combination of video lectures, PowerPoint presentations, and online investigations. The following technology is recommended to be successful in your online course.

- Internet connection – high speed recommended (not dial-up)
- Word Processor, PowerPoint
- Access to a scanner/fax machine
- Access to a digital camera

Additionally, the following hardware and software are necessary to use eCollege:

Our campus is optimized to work in a Microsoft Windows environment. This means our courses work best if you are using a Windows operating system (XP or newer) and a recent version of Microsoft Internet Explorer (6.0, 7.0, or 8.0).

Your courses will also work with Macintosh OS X along with a recent version of Safari 2.0 or better. Along with Internet Explorer and Safari, eCollege also supports the Firefox browser (3.0) on both Windows and Mac operating systems.

It is strongly recommended that you perform a “Browser Test” prior to the start of your course. To launch a browser test, login in to eCollege, click on the ‘myCourses’ tab, and then select the “Browser Test” link under Support Services.

Course Requirements
This course is made up of a series of assignments and assessments to assist you in achieving the course and module learning objectives/outcomes. Each week you will work on various combinations of assignments, activities, readings, and reflective thinking. All homework/investigations will be due as listed in the detailed schedule.

Your course grade will be computed as follows:

Homework/Investigations (25% of total course grade): Course Outcomes/Objectives 1-6
During each regular week of the course, you will have a reading assignment combined with videos/PowerPoint presentations to watch. On the weekly course sheet, you will have assigned problems on Math XL and/or investigations. For each homework set, you need to complete the reading and viewing first. Then, complete the homework assignment. All homework will be due by 11:59 PM on the due date listed in the course outline. The Math XL homework will be submitted online. For the investigations, you need to upload the assignment to the dropbox on ecollege. NO LATE WORK WILL BE ACCEPTED! Early work is always accepted.

Project (15% of total course grade): Course Outcome/Objective 6
You will need to choose 12 vocabulary terms (4 from each unit-Geometry, Probability, and Statistics) from the units that we have covered. With a digital camera, I want you to take a picture of your term in the real world and use it as part of a PowerPoint slide to illustrate your term to a mathematics class at the grade level you hope to teach. You will email me your PowerPoint presentation as your final project or mail me a printout of your slides. Samples are
shown on a project sheet and a sample project listed under Doc Sharing on the eCollege website. NO LATE PROJECTS WILL BE ACCEPTED! Early work is always accepted. Projects are due by Wednesday, August 8, 2012.

**Midterm Exam (30% of total course grade):** Course Outcome/Objectives 4-5
This exam will cover all material within the geometry unit. This exam will cover course readings, lectures, PowerPoints, investigations, and homework assignments. Students must complete the exam independently in a proctored environment. Any form of academic dishonesty will result in an F in the course.

You will be taking your Midterm Exam on the Texas A&M-Commerce Corsicana campus of Navarro College on Tuesday, July 24, from 4-6 PM. Please report to the Waller Classroom Building (Corsicana), Room 111.

**Final Exam (30% of total course grade):** Course Outcome/Objectives 1-6
This exam will cover all material from the entire semester. This exam will cover course readings, lectures, PowerPoints, investigations, and homework assignments. Students must complete the exam independently in a proctored environment. Any form of academic dishonesty will result in an F in the course.

You will be taking your Midterm Exam on the Texas A&M-Commerce Corsicana campus of Navarro College on Thursday, August 9, from 4-6 PM. Please report to the Waller Classroom Building (Corsicana), Room 111.

**Make-up Exams.** If the student misses an exam for an *excused* absence, it is the student’s responsibility to contact the instructor before the scheduled test time in order to schedule a make-up exam.

**Grading Criteria**

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<thead>
<tr>
<th>Numerical Average</th>
<th>Letter Grade</th>
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<tr>
<td>90 – 100</td>
<td>A</td>
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<td>60 – 69</td>
<td>D</td>
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<tr>
<td>0 – 59</td>
<td>F</td>
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**Access and Navigation**
This course was developed and will be facilitated utilizing eCollege, the Learning Management System used by Texas A&M University-Commerce. To get started with the course, go to: https://leo.tamu-commerce.edu/login.aspx.

You will need your CWID and password to log in to the course. If you do not know your CWID or have forgotten your password, contact Technology Services at 903.468.6000 or helpdesk@tamu-commerce.

Being a Successful Online Student
- What Makes a Successful Online Student?
- Self-Evaluation for Potential Online Students
- Readiness for Education at a Distance Indicator (READI)
  ○ Login Information: Login = tamuc; password = online

How is the Course Organized?
This course is organized into weekly assignments and homework. A detailed weekly schedule is given at the end of this document.

What Should Students Do First?
Students should carefully read through the entire syllabus first and email the instructor with any questions. Then, the student should login to eCollege and click on the link for Week 1 located on the left side of the screen. Assignment will be listed by each week and homework problems will be posted at the end of this document and under the assignment link for each week.

How Should Students Proceed Each Week for Class Activities?
1. The student will follow the detailed weekly schedule located at the end of this document. These assignments are also listed under each link on the eCollege site for the course.
2. The student will watch all videos and PowerPoint Presentations first. Video files and PowerPoint presentations are all located under the Doc Sharing tab on eCollege.
3. The student will complete the assigned homework/investigations for each week and submit their work to the instructor by 11:59 PM (via Math XL online or the dropbox) on the specified dates listed in the course schedule. These due dates are clearly listed on the schedule and late homework will NOT be accepted.
4. The student will complete a course project in accordance with the instructions given in this syllabus and on eCollege.
5. The student will complete a Midterm and a Final Exam on specified dates and times in a proctored environment.

Communication and Support
Class announcements will be made through broadcast emails sent to the entire class on eCollege. Personalized communication will be made through email with the instructor or by calling the instructor during specified office hours. Students may also seek tutoring form the instructor during specified office hours. Email responses will be made within 24 hours Monday – Friday.
Student Support
Texas A&M University-Commerce provides students technical support in the use of eCollege. The student help desk may be reached by the following means 24 hours a day, seven days a week.

Chat Support: Click on 'Live Support' on the tool bar within your course to chat with an eCollege Representative.

Phone: 1-866-656-5511 (Toll Free) to speak with eCollege Technical Support Representative.

Email: helpdesk@online.tamuc.org to initiate a support request with eCollege Technical Support Representative.

Help: Click on the 'Help' button on the toolbar for information regarding working with eCollege (i.e. How to submit to dropbox, How to post to discussions etc…)

Tutorials
Peer tutoring is encouraged or you may see the instructor during office hours if you need additional assistance.

Academic Dishonesty
Academic dishonesty in any form will not be tolerated. Any form of academic dishonesty will result in immediate removal from this course with an F.

Statement on Student Behavior
All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment.

Students with Disabilities
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu
Student Disability Resources & Services
Content
This course will cover Standards III, IV, V, VI, VII, VIII, and IX of the EC-6 Mathematics Generalist standards as specified for the Texas State Board for Educator Certification.

Content Outline
The course will cover chapters 9-11, 13-14.

Course Outline:

*This course does have a Final Project that is due at the end. You need to work on the Final Project throughout the course!

XL: indicates that the homework assignment is located on Math XL
MA: indicates that this is a Media assignment and it is located on Math XL
OI: indicates that this is an online investigation and the worksheets with instructions are located Blackboard
All Reading assignments are from the text.
All PowerPoint Presentations and Videos that are listed are located on Blackboard under the Assignments tab.

July 9/10
Introductions on the Discussion Board
Read Chapter 14: Section 1 and Section 2
PowerPoint Presentation on Transformations
PowerPoint Presentation on Transformations in the Coordinate Plane
Translations Part I Video
Translations Part II Video
Reflections Part I Video
Reflections Part II Video
Rotation Video

Assignments due by 7/11:
Orientation (XL)
Transformations (MA)
Homework 14.1-14.2 (XL)

July 11/12/13
Read Chapter 14: Section 4 and Section 5
PowerPoint on Symmetry
Read Chapter 11: Sections 1, Section 2, and Section 3
Introduction to Euclidean Geometry Video
PowerPoint Presentation on Points, Lines, and Planes
Interior Angle Formula Video
Exterior Angles Video
PowerPoint Presentation on Angles and Triangles
Angles Part I Video
Angles Part II Video

Assignments due by 7/16:
Symmetry (MA)
Tessellation (MA)
Homework 14.4-14.5 (XL)
Homework 11.1-11.3 (XL)
July 16/17
Read Chapter 11: Section 4
Read Chapter 13: Section 1 and Section 2
PowerPoint on Similar Figures/Solids
Naming Parts of a Picture Video
Nets and Solids Video
Perimeter Video
Area Video

Assignments due by 7/18:
An Investigation of Nets and Solids worksheets (OI)
Homework 11.4 (XL)
Perimeter and Area (MA)
Homework 13.1-13.2 (XL)

July 18/19
Read Chapter 13: Section 3, Section 4, and Section 5
Surface Area Video
Volume Video

Assignments due by 7/20:
Pythag. Theorem, Surface Area, and Volume (MA)
Homework 13.3-13.5 (XL)

July 23
Vocabulary and Review Video
Review Part II Video
Geometry Practice Problems
Study for Midterm Exam

Extra Resources:
*These are extra videos on perimeter, area, surface area, and volume. Do not worry about the problem numbers. They are from a different textbook.

Perimeter and Area I (#9 and #13) Video
Perimeter and Area II (#15) Video
Perimeter and Area III (#21) Video
Surface Area and Volume (#7) Video
Surface Area and Volume of a Prism (#11) Video
Surface Area and Volume of a Sphere and Cylinder (#9) Video

July 24
Midterm Exam on Tuesday, July 24, from 4-6 PM on the Corsicana campus of Texas A&M – Report to Room 111 of the Waller Classroom Building to find out the room assignment for the exam.

July 25/26
Read Chapter 9: Section 1 and Section 2
Introduction to Probability Video
Counting Principle and Tree Diagrams Video
Probability with Dice Video
PowerPoint Presentation on Coins
PowerPoint Presentation on the Sock Problem
The Sock Problem Video
PowerPoint Presentation on cards
Probability with Cards Video
Probability with Cards Part II Video
Assignments due by 7/27:
- Probability with Coins Investigation worksheets (OI)
- Probability and Tree Diagrams (MA)
- Homework 9.1-9.2 (XL)

July 27/30
- Read Chapter 9: Section 3, Section 4, and Section 5
- Probability with Spinners Video
- Sample TeXES Problem 1 Video
- Sample TeXES Problem 2 Video
- Vocabulary Video

Assignments due by 7/31:
- Probability with Spinners Investigation Worksheets (OI)
- Permutations (MA)
- Homework 9.3-9.5 (XL)

July 31/Aug 1
- Read Chapter 10: Section 1 and Section 2
- Stem and Leaf Plot Video
- Histogram Video
- Box and Whisker Plot Video
- Circle Graph Video
- Scatter Plot/Line Graph Video

Assignments due by 8/2:
- An Investigation of Box Plot and Histogram Worksheets (OI)
- An Investigation of the Scatter Plot Worksheets (OI)
- Bar Graphs and Circle Graphs (MA)
- Homework 10.1-10.2 (XL)

Aug 2/3
- Read Chapter 10: Section 3 and Section 4
- An Introduction to the Calculator Part I Video
- An Introduction to the Calculator Part II Video
- An Introduction to the Calculator Part III Video
- Standard Deviation by Formula Part I Video
- Standard Deviation by Formula Part II Video
- Standard Deviation by Formula Part III Video
- Standard Deviation by Calculator Video
- Application of Standard Deviation Video
- Weighted Averages Video
- Unit Review and Vocabulary Video

Assignments due by 8/6:
- Homework 10.3-10.4 (XL)

Aug 6-8
- Projects Due on Wednesday, August 8, 2012. Please email me your PowerPoint.
- Final Exam on Thursday, August 9, 2012, from 4-6 PM on the Corsicana campus of Texas A&M – Report to Room 111 of the Waller Classroom Building to find out the room assignment for the exam.