Instructor:
John M. Newman, Ed.D
Winnemucca Campus - WCC 117
775-623-1808
Email - Please use Web Campus email
Skype - john_newman_gbc
Office Hours: Monday-Friday by WebCampus email.

Course Location:
Internet

Course Times:
Independent Study

Course Credits:
Three (3) credits

Course Description:
This course will cover a number of different texts in field of Euclidean and Non-Euclidean geometries. All will be supplied by the instructor. Topics such as the origin of geometry, the axiomatic method, Euclidean geometry, constructions, transformational geometry, non-Euclidean geometry, and fractal geometry will be investigated. We will be covering a number of different texts in the field of Euclidean and Non-Euclidean geometries. All will be supplied by the instructor. Topics such as the origin of geometry, the axiomatic method, Euclidean geometry, constructions, transformational geometry, non-Euclidean geometry, and fractal geometry will be investigated. This course will utilize WebCampus, discussion via the Internet and in person as well as written work. Students will use WebCampus, VoIP (Skype) via the Internet, and personal meetings to communicate with the instructor, turn in assignments, and communicate with fellow students.

Prerequisite:
Math 333

Required Textbook:  
Geometry Connections - Mathematics for Middle School Teachers, Beem & University of Missouri (Prentice Hall, 2005); ISBN: 9780131449268
**Additional Materials:**
Geometer’s Sketchpad software version 5 (Student Edition). Available at:
http://www.keycurriculum.com/products/sketchpad/the-geometers-sketchpad-pricing-and-purchasing#pricing

**Method of Instruction:**
Math 475 will utilize several methods of instruction. They will include:
1. Classroom reading material.
2. Classroom discussions.
3. Electronic interaction via WebCampus.
4. Student written work.
5. Student presentations.

*Canvas (WebCampus)*
All of the course material, except for tests, will be delivered through Canvas, the Learning Management System which we will use for our course. If at any time your use of the program becomes anti-productive or destructive, your access to it will be blocked. Keep in mind that all access, including messages, mail, and chat is visible to and monitored by the instructor. Nothing you do within the Canvas course system is private. Make sure that all your contributions are civil, respectful of other students and the instructor, and on topic. **All important course announcements will come through Canvas announcements. It is your responsibility to make sure your communication preferences are set up in Canvas such that you receive these announcements in a timely manner.**

**Course Requirements:**
Math 120 will consist of:
- Reading prepared material
- Student Assignments/Projects
- Midterm test
- Final exam

**Learner Outcomes and Measurements:**
Upon completion of MATH 475, the successful student will be able to do the following:

**Explore**
- use The Geometer's Sketchpad with reasonable proficiency,
- discuss ideas in geometry -- and more generally, in mathematics -- that contain unsolved questions and unresolved issues,
- demonstrate an understanding of the need to justify or refute any conjecture,
- conduct geometric experiments and form an opinion on the validity of a geometric statement -- and if necessary, revise the statement based on these experiments,
- demonstrate spatial reasoning by constructing representations of geometric objects and situations;

**Prove**
- use correct logical reasoning consistently,
- visualize geometric situations at an appropriate level,
• construct and interpret geometric diagrams,
• explain the role of axioms and undefined terms in a mathematical theory,
• identify basic proof types and issues -- for example, proof by contradiction, breaking a situation into cases, etc.,
• suggest possible proof methods for geometric statements appropriate to the course,
• use various proof strategies appropriately -- for example, direct proof, indirect proof, proof by contradiction, counterexample, etc.,
• develop proofs of appropriate sophistication;

Communicate
• demonstrate an understanding of relevant mathematical vocabulary,
• use geometric language more precisely,
• discuss geometric ideas with peers,
• present geometric arguments to small and large groups of peers,
• organize geometric ideas into coherent arguments or questions,
• relate geometric statements to diagrams, and vise-versa,
• read and critique mathematical arguments,
• write coherent geometric proofs,
• critique arguments made by peers.

Student outcomes will be measured throughout the course based on class discussion, written assignments and student projects.

Policy Statements:
Attendance Policy:
MATH 475 is an independent study course. It is imperative that students check-in regularly to the WebCampus portion of the course for weekly reading, written, and electronic assignments. Class attendance is essential for student success. Each class meeting builds the foundation for subsequent class meetings. Without full participation and regular class attendance, students will find themselves at a severe disadvantage for achieving success in this course.
Weekly contact with instructor is essential!
Attendance will be taken and may be reported to financial aid agencies.

Work Policy:
All course work is due on the assigned date and time.
All work from outlying sites must be submitted electronically in MS Word, Geometer’s Sketchpad (GSP) and/or PDF format. FAXES WILL NOT BE ACCEPTED. The instructor assumes no responsibility for making sure you receive any course material for which you were absent. Contact another class participant ahead of time to collect class materials and take notes. Please understand and accept that there is considerable investment of time to be successful in any college course. As a minimum standard, each credit hour for a college course requires two hours of homework. Please take into consideration a minimum of 6 hours per week homework requirement (outside of class) when planning your semester and personal schedule. Also, do not expect that your mere presence in the classroom will earn you a passing grade. You must be a participant and not just a spectator. The amount and degree of effort you put into your work will be reflected in your final grade!

THE LAST DAY TO DROP A CLASS FOR NO GRADE IS MONDAY, NOVEMBER 2nd.
Homework Policy:
Students are expected to have all assignments turned in by the specified date. A deduction of 10% per day up to three days will be taken off late work submitted after the due date. No credit for work submitted after three days. Be sure to keep up to date on your work. If you get too far behind this semester, you will have difficulty catching up; especially if you are taking other classes, and/or working.

Make-up Policy:
Since this is an upper division, independent study course you should not have any reason to miss any assignment and/or tests. I realize certain circumstances arise and they will be dealt with on an individual case base. You must keep me advised of any problems that may arise.

Policy of Academic Integrity:
The NSHE Code (Board of Regents Handbook 6.2.2q) expressly forbids all acts of academic dishonesty, including but not limited to “cheating, plagiarism, falsifying research data or results, or assisting others to do the same”. Academic honesty is expected in this course. All student work must be original and authentic. Any acts of cheating, copying, and/or plagiarizing are violations of the NSHE code of conduct and will be taken seriously. Students who cheat, copy another’s work, or plagiarize from the Internet or other sources will fail the course regardless of other course work and are subject to dismissal from the academic institution.

The Bottom Line. To do well in this course, you need to be organized, plan your time well, study your notes and handouts outside class, finish all the homework, and pay attention to directions. You don’t have to be a math whiz - good work habits count for more than native math ability. If you want to do well, you will do the work. If you don’t, you are just wasting your time.

GBC is a learning-centered institution. The faculty are here to help you, but learning is your job. “Always bear in mind that your own resolution to succeed, is more important than any other one thing.” —Abraham Lincoln, 5 Nov 1855

Students with Disabilities:
GBC supports providing equal access for students with disabilities. An advisor is available to discuss appropriate accommodations with students. Please contact the ADA Officer (Julie Byrnes) in Elko at 775.753.2271 at your earliest convenience to request timely and appropriate accommodations.

Campus Security:
GBC is committed to the safety of our students and has a duty to promote awareness and prevention programs for violence on campus under the Jeanne Clery Act as well as the Campus SaVE (Sexual Violence Elimination Act) and VAWA (Violence Against Women Act), which are amendments to Clery. Acts of violence include, but are not limited to, sexual assault, domestic violence, dating violence, and stalking. Acts of violence can occur on the physical campus or centers of GBC in addition to field placement sites, clinical practice settings, and other places where college or class activities occur. As well, the online environment at GBC is considered a GBC site. If you experience any incidence where your safety has been threatened or violated, or if you feel threatened or harassed, immediately report this to me, any center director, faculty, or staff member,
or directly to the Director of Environmental Health, Safety & Security(775.753.2115) or the Vice President for Student Services(775.753.2282).

**Grading Policy and Grading Scale:**
Grades will be based upon the following criteria:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
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<tbody>
<tr>
<td>Discussion Postings</td>
<td>10 points each</td>
</tr>
<tr>
<td>Assignments/Activities</td>
<td>10 - 20 points each</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>155 points</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100 points</td>
</tr>
</tbody>
</table>

Your grade will be calculated using the following scale.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>95% – 100%</td>
</tr>
<tr>
<td>A-</td>
<td>&lt;95% – 90%</td>
</tr>
<tr>
<td>B</td>
<td>&lt;90% – 85%</td>
</tr>
<tr>
<td>B-</td>
<td>&lt;85% – 80%</td>
</tr>
<tr>
<td>C</td>
<td>&lt;80% – 75%</td>
</tr>
<tr>
<td>C-</td>
<td>&lt;75% – 70%</td>
</tr>
<tr>
<td>D</td>
<td>&lt;70% - 65%</td>
</tr>
<tr>
<td>D-</td>
<td>&lt;65% - 60%</td>
</tr>
<tr>
<td>F</td>
<td>Below 60%</td>
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</tbody>
</table>

A request for an incomplete grade will be considered ONLY if the extenuating circumstances occur after the last day to drop and you have a passing grade of at least 60% when you make the request.

Please keep the following in mind: Your grade is determined by grade points. Points are earned by demonstrating what you have learned, not what you have endured during this course.

**Course Outline/Content/Schedule:**

**Tentative Schedule of Class Meetings – Fall 2015**
The instructor reserves the right to modify the schedule at any time during the semester.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Chapter, Section &amp; Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug. 31</td>
<td>Introductions, Syllabus, Course Expectations Geometer’s Sketchpad Introduction - Webinars</td>
</tr>
<tr>
<td>2</td>
<td>Sept. 7</td>
<td>Continuation of Geometer’s Sketchpad Projects Sketchpad Webinars</td>
</tr>
<tr>
<td>3</td>
<td>Sept. 14</td>
<td>Proofs and Geometry Textbooks</td>
</tr>
<tr>
<td>4</td>
<td>Sept. 21</td>
<td>Chapter 1 – Textbook</td>
</tr>
<tr>
<td>6</td>
<td>Oct. 5</td>
<td>Chapter 2 - Textbook</td>
</tr>
<tr>
<td></td>
<td>Date</td>
<td>Topic</td>
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<td>------------------------------------------------------------</td>
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<tr>
<td>8</td>
<td>Oct. 19</td>
<td>Chapter 3 - Textbook</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Midterm Exam</strong></td>
</tr>
<tr>
<td>10</td>
<td>Nov. 2</td>
<td>Chapter 4 - Textbook</td>
</tr>
<tr>
<td>11</td>
<td>Nov. 9</td>
<td>Geometry in Nature, Art and Society: Fractals</td>
</tr>
<tr>
<td>12</td>
<td>Nov. 16</td>
<td>Chapter 5 - Textbook</td>
</tr>
<tr>
<td>13</td>
<td>Nov. 23</td>
<td>Geometry Software</td>
</tr>
<tr>
<td>14</td>
<td>Nov. 30</td>
<td>Chapter 6 - Textbook</td>
</tr>
<tr>
<td>15</td>
<td>Dec. 7</td>
<td>Culmination of class.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Final Exam</strong></td>
</tr>
</tbody>
</table>

**Finals Week** Dec.14-16